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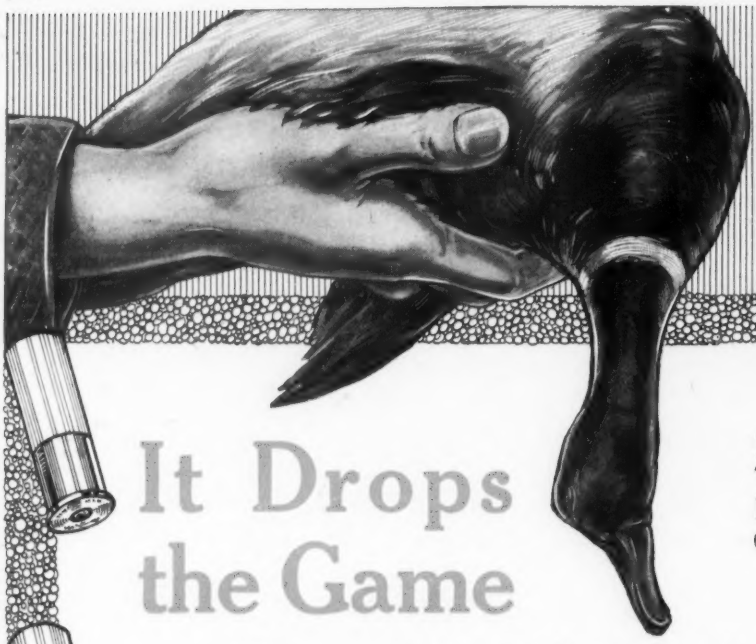

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Photo by N. A. Russell.

RECREATION IN THE MOUNTAIN WILDS.

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OUTDOOR LIFE

Vol. XXX Number 3

TIPS FOR THE TRAIL

DAN BEARD

"They have cradled you in custom, they have primed you with their preaching,
They have soaked you in convention through and through;
They have put you in a showcase; you're a credit to their teaching—
But can't you hear the wild? It's calling you.
Let us probe the silent places, let us seek what luck betide us;
Let us journey to a lonely land I know.
There's a whisper on the night-wind, there's a star agleam to guide us,
And the wild is calling, calling. Let us go."

—SONGS OF A SOURDOUGH.

Of course I do not believe in smoking; we are all better off without tobacco, whiskey, gin or rum, coffee or tea, but inasmuch as there are many outdoor men who do smoke, myself among the number, it is a good idea to know how to get a light for your pipe from the glowing end of a small stick or even the hot end of a pernicious cigarette. It is to be taken for granted that every smoker knows how to light a pipe with a match, a big hot coal or even by the use of a sun-glass; but, as far as my experience goes, few know how to light it with a cigarette. If, however, the smoker will put a piece of thin paper over the bowl of his pipe and hold the edges down tightly around the bowl, then put the end of the cigarette in the center of the paper, allowing it to burn a small hole through to the tobacco, a few vigorous puffs will ignite the tobacco in a most satisfactory manner. You see the trouble with using a small ember without flame for a light is, that when you draw through your pipe, the

SHOWING HOW TO LIGHT A PIPE FROM A CIGARETTE OR GLOWING END OF A SMALL STICK

draught comes all around the lighted end and not through it, but if the rest of the surface of the tobacco is covered with a piece of paper, the draught must come

directly through the hot coals, speedily ignites it, and soon the whole surface in the pipe bowl is glowing in an even and satisfactory manner. (See Fig. 1.) This is one of the "simple things, the true things," I have learned from "the silent men who do things."

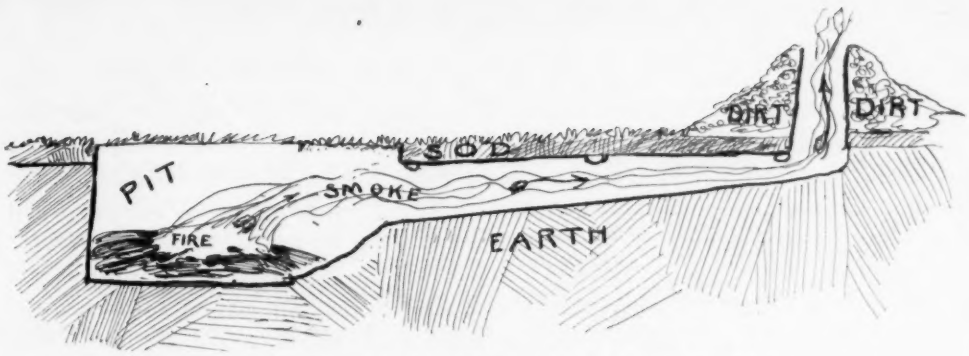
Another equally simple trick and a useful one is to know how to drive pegs in the trunk of a tree so as to make a hat or a coat rack of it. First, of course, you must whittle out your pegs of some hard wood of proper size and convenient length, then whittle one end of a peg (C Fig. 2) to a blunt point. It is only necessary now to sink the blade of your ax with one blow into the tree at the spot where you want to drive your peg. Do not drive the ax in across the grain, but parallel to the grain, that is, vertical to the ground (A-B Fig. 2). Now remove the ax, and, with its head, drive your pegs in the slit (D Fig. 2). This will not injure the tree—the wound will heal up when the pegs are knocked out. This makes a simple and convenient rack on which to hang your coat out of reach of the "varmints" that creep over them when they are left upon the ground.

You do not need a big fire for a cooking fire. A fire made of small twigs will flame up at first and the flame is good for boiling your water for your tea or coffee. When this sort of a fire dies down it leaves a nice bed of hot coals over which to broil your meat, toast your bread or fry your fish.

To toast or broil your meat, cut a forked stick of green wood, strip the bark off the forks and point them, slide a piece of venison—sheep or goat, if you have it—the breast of a grouse, quail or whatever game you have, on to the fork, then slip a piece of bacon, and then another piece of meat, then another piece of bacon on the fork. The natural spring in the fork will keep the meat stretched out flat and in this way it may be broiled over the hot coals and will make a delicious morsel. In truth, the odor arising from the broiled meat will cause you to drool at the corners of your month and thank God for the emptiness of your stomach. A small square of wire netting weighs little, is easily packed with your duffle and makes a splendid broiler.

If you are in a more or less permanent camp and want a refrigerator, dig a hole in the ground and put a packing-box (Fig. 3) in the hole. Make the hole at least six inches wider than the box

FIGURE 3.



SECTION SHOWING CONSTRUCTION OF A PRAIRIE STOVE.

all around, fill the intervening space with gravel or sand; keep the sand soaked with water and cover top of the box with a wet blanket, tarpaulin or other similar object over which you can put the balsam, hemlock, pine or spruce boughs to keep the heat from evaporating the water in the blanket. In this cache you can keep meats and fish for a long time. I have found that if I hang the meat high, however, the flies will not bother it, and if I carefully wipe off all moisture and cut all bloody parts, when the meat is hung in the shade where the wind can reach it, the outside dries, enclosing it in a sort of skin and protecting it from decay for a long time.

If you are on the prairie and must build your fire from cattle chips, you will need a good draught. At the best this is a poor sort of fuel and will not make a roaring, crackling, blazing fire, but thousands of good meals have been cooked over buffalo-chip fires in the old days and are being cooked over cow-chip fires today. I never tried to make a fire with greasewood, but those who have tell me that cow-chip fires are much more satisfactory. If you can find a few sticks, however, do not use them for the fire, but for girders for your flue (Fig. 4.) Now dig a hole for your fireplace; make it say a foot and a half deep. From this hole dig a trench three feet long, cutting the sod wider than the flue and saving it to roof the flue with after it is done. At the end of the trench pile your loose dirt around to make the chimney. Now lay your sticks across the trench and rest the sod upon the sticks. If you have no sticks the sod may be made to bridge the space without their support and thus make a flue from your fireplace to your chimney at the end. This will make a draught for your chip fire in the pit, and if it has been properly built you will find that the chip fire makes a very hot one and a good one for broiling, frying, toasting and boiling water for tea or coffee.

Do not build your fire against a standing tree. Trees are too rare to be injured in this manner and fires are too prevalent and destructive to be encouraged by any such fool methods of building campfires. Above all things, put your campfire out when you break camp—soak it, soak it, soak it, with water. If you are a sportsman, a hunter, a nature photographer, a lover of the big outdoor world, for God's sake use the utmost care not to add by your carelessness to the destruction of what little is left us of the old wilderness we loved so well. The time has come when we can no longer be reckless. We have been living on our principal

and the end of our bank account is in sight. It has been said without contradiction that every important wild animal is being killed off faster than it breeds. The same is true of every one of our forest trees, and it is up to us, we men who love the open, not only to guard what is left of the wild life, but to act as policemen and game wardens to restrain the thousands of foolish and heedless human beings who are let loose in the woods and on the plains every year and who are as destructive as the grasshoppers in Kansas and more thoughtless than schoolboys.

THE FRED VREELAND ONE-MAN TENT. CAN BE TOTED ON ONE'S OWN BACK, IS LIGHT AND MAKES A SMALL BUNDLE.

On account of the frequent rains in the eastern part of the United States, a tent is a necessity for any sportsman who wishes to sleep dry and to enjoy some comfort. Hardships are a great thing to train one, but there will be plenty coming your way without gunning for them, and a wet bed and a wet sleeping place is a most disagreeable and usually an unnecessary hardship. In many parts of the West, however, one may sleep in the open for weeks at a time with little or no danger of being drenched by the rain. However, when rain does come in these sections, it comes with a vengeance. I lately saw a photograph of a building with a sheet-iron roof which was perforated with holes made by hailstones. Personally I have never seen a hailstone larger than three inches in circumference, but these were plenty large enough to make life uncomfortable. They would not, however, go through an ordinary tent-cloth. Taking all these things into consideration, the smaller the tent and the lighter the material, the more comfort one can derive from it. A small tent is easily pitched, easily packed and easily carried. Fig. 5 shows a one-man tent designed by Frederick Vreeland of the Campfire Club of America. The so-called "balloon-silk" tents are fine for

early risers, but when the sun comes up the light shines through them so that you might almost as well be sleeping in a glass house, or rather trying to sleep in a glass house. If you are traveling with a wagon or with a pack train and plenty of horses or in a commodious boat, pneumatic mattresses are fine things to take with you. I know of no more luxurious feeling after a hard and arduous day's work than to stretch out in one's sleeping bag on the yielding surface of a pneumatic mattress. It differs from all other mattresses in that it adapts itself to the curves of the body, supporting and resting all the tired muscles in a most grateful and satisfying manner; but a pneumatic mattress is a heavy burden and not to be thought of when one is "traveling light." The nearer you can approach to the simplicity of a frying pan and a pair of blankets, the freer and more independent you are on the trail. I have seen the time when a pair of field-glasses flung over my shoulder weighed a ton, when the jack-knife in my pocket seemed as heavy as an iron dumb bell.

Folded paper drinking cups are light, occupy but little space and are most convenient. A wooden drinking cup made of a knot of a tree and hung by a thong to one's belt is much better than a tin or rubber cup; especially is this true in a canoe, for the reason that the wooden cup will float, whereas the rubber or metal one will sink if it drops overboard.

But probably the best school in the world is that of experience. Consequently, I would advise the amateur with plenty of money to go to a first-class outfitting establishment and purchase everything that suits his fancy. It will be fun to do this shopping; the things displayed in these stores are ingenious and attractive; they are well-made, and, after seeing them, it is hard to understand how a fellow can get along without them. By buying them you make yourself solid with the storekeeper and most of these outfitters are outdoor men themselves, and their friendship is valuable. When you hit the trail you will make friends of your guide, the Indians and the settlers, by the presents you make them of these useful and ingenious knick-knacks which you will possibly find too bothersome to carry and, at the end of the trip, you have learned better than anyone could tell you just what you can do without—which is the most necessary lesson in camping; for all agree that the most useful knowledge is to know what NOT TO TAKE with you.

September

When September comes a-creeping
And the chickens they are ripe,
When the teal ducks are a-bunching
And you see the busy snipe
Come a rushing to the low lands,
These are days you can't forget:
For long months you've been awaiting,
On this day your thoughts were set.
Now the pointer and the setter cross
The fields, are going fast,
In the stubble by the wheat shocks
They are standing staunch at last;
Out you pile, your guns are ready,
Every nerve is strung up high,
If you get them you are lucky,
If you miss them then you sigh—
And you say, "my gun got balled up,"
Or, "the birds they flushed too wide."
But you watch them as they settle
In the weeds where they can hide.
Now, again the dogs have got them,
Steady, Queen and Fritz and Belle,
They are flushing, you are shooting,
And you're doing mighty well,
And at night when all is over,
You will shoot again each bird,
Talk about those good, long smashes,
But those missed ones—not a word.

NEIL FINCH.

A KELEK—MOSSUL RAFT BUILT OF SKIN FLOATS.

DOWN THE TIGRIS IN A SKIN RAFT

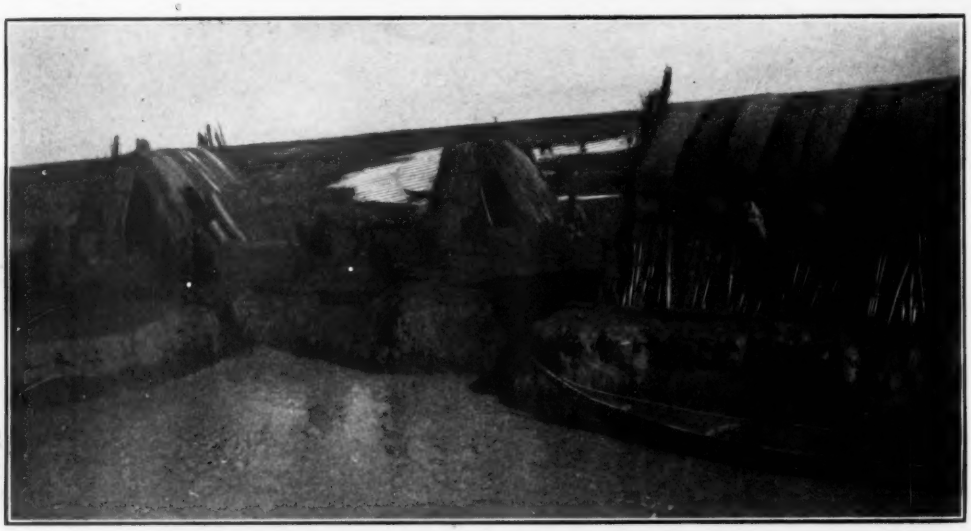
FRED SIMPICH

UNITED STATES CONSUL AT BAGDAD

A goat-skin, inflated with air, seems a queer object for a man to ride on—for even a short distance. Yet in 1910 I traveled 400 miles on goat-skins, blown full of Armenian mountain air. I confess it took more than one goat-skin—there were 150 under me when I started. Yet these skins carried me safely and easily down the historic Tigris, past ruined Nineveh, Jonah's Tomb and finally to Bagdad, the old home of Sinbad the Sailor. For you see, I was floating on them—not flying. These strange rafts of skin, used only in this Arab land, are called "Keleks," and the men who run them—stalwart Kurds—are known as "Kelekjiis." On the walls of the palaces excavated at Nineveh are figures of men riding on inflated skins, showing that the principle of the kelek is centuries old. And even now, along the Tigris, natives frequently cross the stream on a single skin. At Mossul I saw even women do this; wading out into the stream they would place the tight, bobbing skin—light as an inflated bladder—on the water before them, lie down upon it, and paddle away for the opposite bank!

HOW A KELEK IS BUILT.

The kelek is an odd craft. And Orville Wright himself—as he bent over



ARAB HUTS BELOW MOSSUL, ON TIGRIS BANK.

his first biplane—felt no more fascination than I as I watched the deft Kurds putting that strange boat together. First they brought a huge pile of worn goat-skins, used in many a previous kelek. Then one old Kurd, with a lung power not hinted at by his stooped frame and lean limbs, siezed a skin, placed his mouth to the aperture, and began to blow. Swiftly that flat, limp skin took on a round figure—a fat, corpulent shape which no live goat ever owned—at least not in the barren Kurdish hills. Soon other men came to help, and in a little while all the skins were inflated and laid in an orderly formation on the level bank. Then light, straight poles, about 12 feet long, were brought; with these a square platform was built over the skins and the whole craft lashed together with cords. Then it was placed in shallow water at the river's edge, mats spread over the pole-platform, my luggage placed aboard, and we were ready for the long cruise to Bagdad—leagues to the south. Accompanied by a native Chaldean servant and two "kelekjiis," we started.

From our starting point, somewhat above Mossul, the Tigris sweeps rapidly along, winding among rough hills, sparsely covered with camel thorn or brushwood. Flocks of goats and sheep came in sight at times, herded by small boys and girls—half clad, wild creatures who ran along the banks, begging "baaksheesh" and throwing stones at us in turn. Squat towns of mean, mud huts slid by, too, with bare-legged women washing clothes or carrying water from the riverside in great stone jars.

PASSED ANCIENT NINEVEH, JONAH'S TOMB AND MODERN MOSSUL.

Working the long clumsy sweeps that keep the kelek in the current, the two husky Kurds soon brought the raft down to Mossul—where muslin got its name. Mossul is called a "modern" town, merely to distinguish it from Nineveh—whose ruins lie just across the Tigris. An odd pontoon bridge connects the two, but poorer people get a goat-skin and swim across the river to save the bridge-toll—low as it is.

Landing the kelek on the Nineveh or east bank, I went ashore to explore this old relic of antiquity—to see the city that Jonah tried to save. Little is left now save mounds, crumbling walls and broken bits of ruined statuary. All the great winged bulls, stone gods, cuneiform tablets and bronze works of art have been removed to the museums of Paris and London. It was here, as every reader knows, that Layard, Rawlinson and Botta made the sensational discoveries which prove many parts of the Old Testament. Here were found the famous deluge tablets, telling of creation, the fall of man, and the deluge. And here, too, in a filthy Arab village called "Nebi Yunus," is the tomb of Jonah--the prophet who rode around in a whale. He beat us all to it, when it came to fancy forms of travel. Most of the natives around here are Moslems, but they unite with the Nestorians, Chaldeans, Kurds and Yezidis in doing honor to old Jonah. All over the hills of old Nineveh, above the ruined palace of Assurbanipal, the wandering tribes drive their flocks of camels, goats and sheep. Brown tents dot the rolling plain where once rose the proud palaces of the Assyrians, and naked Arab boys are playing leapfrog where camped the mighty armies of this old, old East. But some of the sports of these Arabs are the same as in Abraham's time. Men still use falcons to catch game, and, as I walked back to the kelek we met a party of mounted men bearing falcons on their wrists. Behind followed donkeys carrying the carcasses of several gazelle, taken on the desert with the aid of these tiny but fierce, unerring hawks. The falcon is trained to pursue a fleeing gazelle, light atop its head and hold onto the unfortunate animal with beak and talons. The fluttering bird so confuses the running gazelle—by the wing-beats about the animal's eyes—that the lance men easily overtake and slay the game.

THROUGH THE PLAINS OF MESOPOTAMIA.

Should the kelek strike a stone or snag, some of the skins are liable to burst. This happened to us; but it was the work of a few minutes only to remove the exploded skin, repair the puncture by means of a wooden button, and continue the cruise. Steamers ply the Tigris only as far north as Bagdad—some 500 miles upstream from the Persian gulf. Upstream from Bagdad they cannot pass by reason of rocks and bars. Only keleks go down, carrying wool, hides, pottery, wood, grain and other products of the northland.

A SAFINA ON THE TIGRIS.

Keleks are continually held up and looted by the rough Arab nomads who

pasture along the Tigris, between Mossul and Bagdad. The Turkish troops are constantly in the field in Mesopotamia, seeking to suppress lawless

KURDISH CAVALRY.

Arabs. Once—not so long ago—a French nobleman named Cholet, who came to Arabia seeking adventure, got his heart's desire during a kelek voyage down the Tigris. A few miles above Bagdad, near Tehrit, a band of robbers seventy-five strong began firing on his kelek from the river banks. Nearly the whole crew of three keleks, which were traveling together at the time, were slain. Cholet managed to escape by reason of a dust storm which blew up at the critical moment.

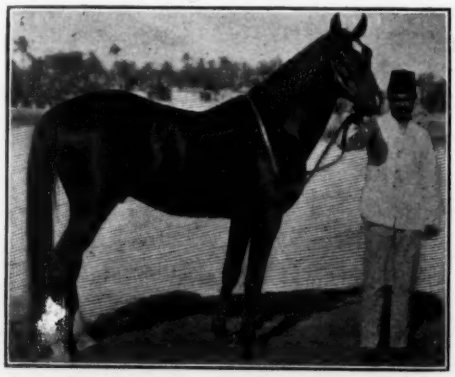
At night we tied the kelek to the bank, putting out a long line of twisted vines. In a thick growth of licorice bushes I put up wild pig and francolin, getting some fine birds for camp supper. All night long the jackals wailed loudly about our rude camp, growing bold at one time and trying to rob our meagre store of dates and rice flour.

The second day from Mossul we passed the mouth of the Lesser Zab, and overtook other keleks, heavily loaded with casks of wine from Kerkouk. Ananias, the first of all liars, is entombed at Kerkouk—an Arab town of 10,000. From this same Kerkouk come some of the finest horses in Arabia, many of which are sold to India each year for polo and army use.

Floating through this wild Arab country, where for months at a time no white man is seen, is a novel and unusual form of outdoor pleasure. It took our raft just five days to float down stream to

Bagdad's shrines of fretted gold,
High-walled gardens, green and old.

Here, in Sinbad's old home, the Turks keep 25,000 soldiers. Neat, busy officers, schooled in Germany, drill the Arab recruits on the flat plain outside the old City of the Caliphs, and keep order among the turbulent tribes. Bagdad, it is said, is more truly a Bedouin city than any other in the world. Into it stalk the long camel caravans from Persia, Aleppo and the North. Here the influence of Europe is as yet felt hardly at all. Some of the natives think Amer-



AN ARAB HORSE FROM NEJD.

This is the home of the purest breed. Contrary to general belief, high-grade horses are not plentiful in Arabia, and the sheiks who own really good ones are loath to sell them.

ica a part of that far-off country called "London," from whence comes their calico and cheap rifles; others have not

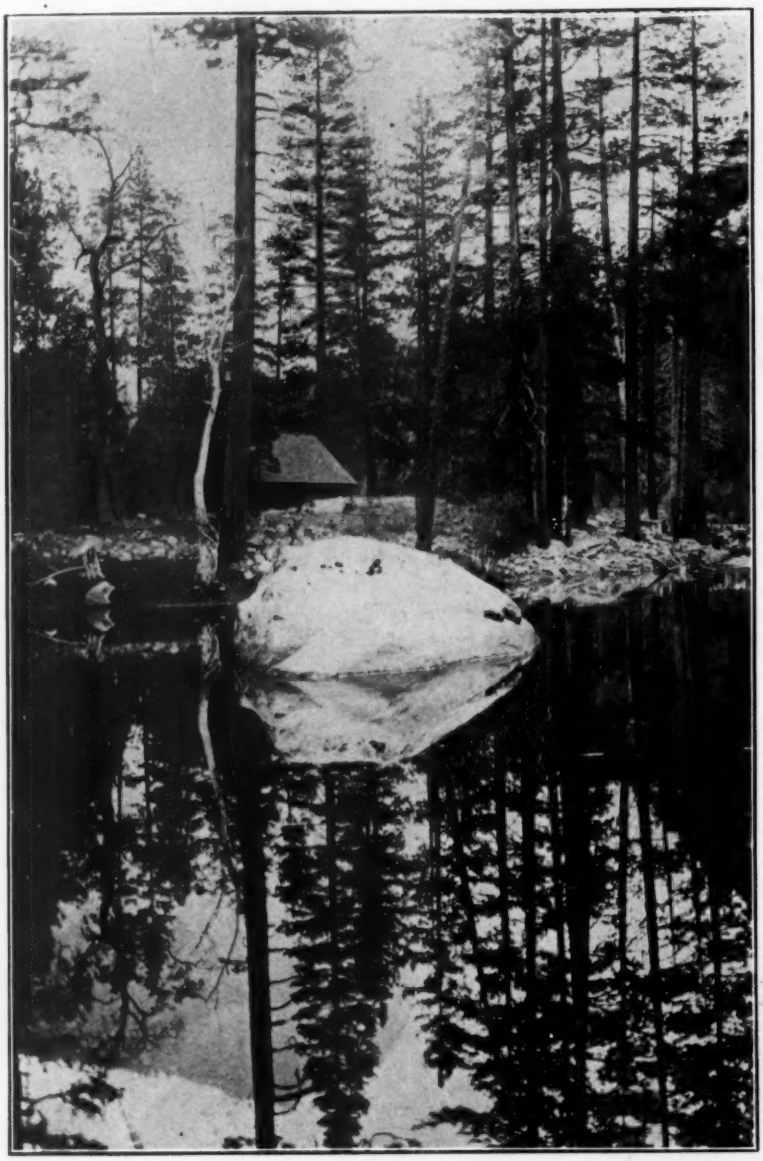
THE RESERVES CALLED OUT IN ARAB TROUBLES OF 1910 NEAR BAGDAD.

even heard the word. On the plains about the old city the Arab boys race their horses; on the broad Tigris they sail their "safinas" and "mahalas," older folk sticking to the safer if slower "goofa." A "goofa" is a perfectly round, basket-like boat, made of woven willows and smeared with bitumen—the very same craft, says tradition, in which little Moses was cast adrift!

This historic Tigris has known many great travelers in centuries past. Alexander, Darius, Cyrus, Sennacherib, Nebuchadnezzar, Xerxes, Herodotus and Marco Polo are among those who sailed its yellow waters in days gone by. Even Father Abraham's people pitched their tents upon its banks, freighting with goofas and safinas. And to this day 40,000 of the Children of Israel make their home in Bagdad.

Floating down any great river on a raft, with camp supplies on board, is such an inexpensive, yet interesting form of outdoor sport that I wonder that more Americans do not take their vacations in this way. A book, a camera and a gun is your equipment.

FERRYING IN THE HORSES ON ARAB SAFINA, NEAR MOSSUL.



A BEAUTIFUL REFLECTION EFFECT.

Heads in Reflection

In the summer of 1911 my friend and I took a horseback trip to the famous Yosemite Valley of California. Near Pine Ridge, about ten miles from the main entrance to the valley, we halted our horses one glorious day on the bank of a beautiful stream.

My friend is an enthusiastic artist. He fingered his camera lovingly and exclaimed: "See that reflection effect! The mountains and trees and rocks are just as distinct in the water as they are in reality!"

"But look at the granite boulder!" said I. "See the water-washed holes for eyes and nose and the dead limb for a huge horn. It is the perfect head of a bull, the lower half being the reflection."

He carefully focused his camera and a pressure of the bulb resulted in the curious picture. When the plate was developed he gazed at it with admiration and then burst into exclamations.

"Look!" he cried, "there is another skull right back of the big one. A large stone and a small one, a piece of wood and a small branch make the upper half and the reflection completes the picture."

"Yes," I mused, "it is the skull of the bull's bride. Your camera has revealed a tragedy."

We rode by the place on our return trip and proved again the truth of the picture. This attractive spot is on the Pine Ridge lumber flume between Fresno Flats and Summer Dale. The flume is about fifteen miles long and runs to Sanger. The picture is a rare one indeed, even without the very unusual yet natural arrangements producing the effect of two skulls.

BEN FIELD.

(See Opposite Page.)

(Verses by E. A. Brininstool; Drawing by Lucile Philbrook.)

Alone

The trails are silent since you went away;
It's lonely here, and everything looks strange;
The once-blue skies have turned to ashen gray,
And seem to blot the sunshine from the range.
I miss the silvery jingle of your spur
I heard when I was ridin' by your side,
And when I think of you a sudden blur
Gits in my eyes and blinds me as I ride.

The manzanita berries ain't more red
Than was the roses bloomin' in your cheek;
And when I'd watch you lopin' off ahead,
The thoughts I'd think—but didn't dare to speak!
And when I stop to cinch my saddle tight,
I listen for your voice to call to me;
And when I'm ridin' 'round the herd at night,
Your sweet face in the jeweled skies I see.

It wa'n't like this before you crossed my trail.
I rode the lonely range, and didn't mind
The solitude of cañon, knoll or swale,
Or deep arroyo that I left behind.
I didn't see the glory of the hills
You pointed out to me when first you came,
But now my lonely heart pulsates and thrills
When mountain breezes whisper low your name!

The naggin' of the boys is harsh; it jars
And grates upon me when I'm in their sight;
I look to see you at the corral bars,
But no one's there when I ride up at night.
I cross the mesa where the sweet perfume
Of wildflowers that you loved so fills the air,
But all their brightness can't drive off the gloom,
And it is just because you are not there!

The night-bird's call comes to me through the dark;
The flickerin' campfire throws a fitful glare;
And off across the range the coyote's bark
Goes echoin' on the silent midnight air.
I hear the bedded cattle by the stream
Stir, when the grim night-riders pass their view,
And then I drowse, and doze away, and dream,
And dreamin', ride the trails again—with you!

E. A. BRININSTOOL.

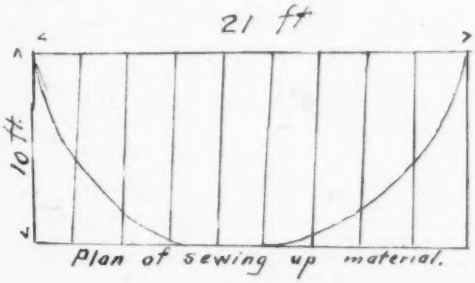
HOW TO MAKE AN INDIAN TEEPEE

J. B. TIGHE

Without doubt the teepee, which has been used by the plains Indians for centuries, is the highest development of movable camp, and is the most comfortable type for all climates so far invented by man. It is simple and easily made, light and easily transported; is rain and wind proof; warm or cool as desired; covers more ground space for amount of canvas used than any other form of tent; can be opened in a moment or kept tightly closed and still be ventilated by the smoke hole in top; it has no center pole or outside guys to trip over; meals can be cooked over fire in center in bad weather; with a slight smudge mosquitoes can be kept out; it is easily set up and quickly taken down; and, lastly, it is the only tent in which one can build an open fire—and stay in with the fire. Such a tent is indeed a boon to the fall or early spring hunter who desires a fire during the cold, wet nights, provided he is located where he can cut eleven straight, slim poles to set it up. It can be set up with three poles as a tripod, or, at a pinch, one leaned against a tree. A ten-foot teepee will accommodate three or four men comfortably, and five at a pinch, so it is, perhaps, the best to describe.

Secure from your dealer in either balloon silk, four-ounce drill or unbleached sheeting, according to the size of your pocketbook, nine pieces ten feet long by two feet six inches wide and have them sewed together on the machine to make a piece about twenty-two feet by ten feet. If you get three-foot widths you will need seven pieces ten feet long; any widths that will sew up into a piece at least twenty-one feet by ten feet will do. Now spread this on the floor and tack it down to hold in position. Find the center (E in the sketch), drive a tack and make a loop in a piece of string that will reach straight across the cloth to F in the diagram. This string should be ten feet long and should have a loop tied in at the F end so a pencil can be inserted.

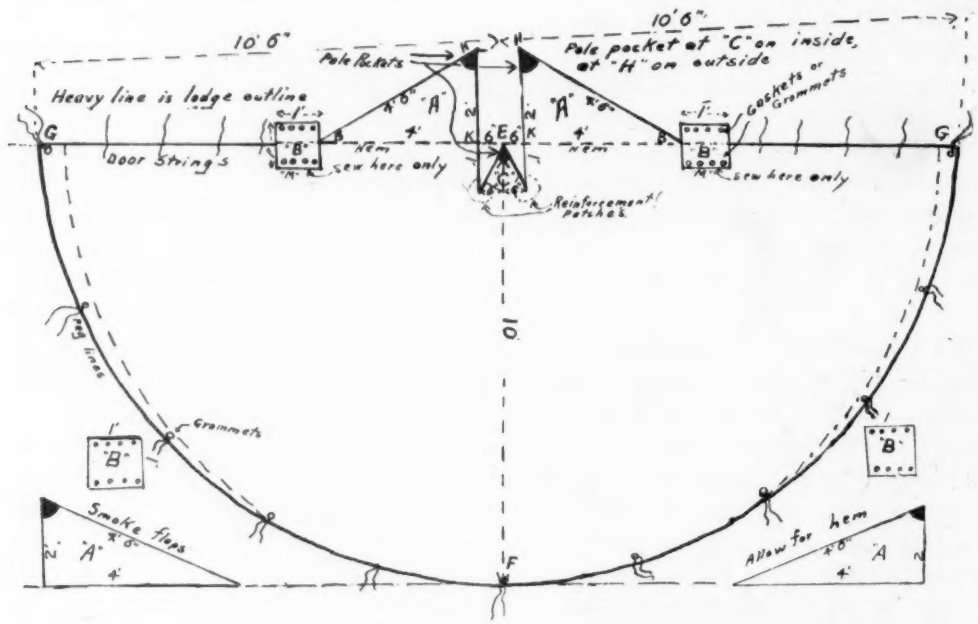
Swing this string around to G in the diagram; then swing back in a half-circle to the other G, making a line corresponding to the dotted line just inside the heavy half-circle in the diagram. Now move your E tack 6 inches away from the edge of the cloth and make a new loop in your string so it will be 6 inches longer; then draw a new half-circle which will give the heavy circle in the sketch. This makes your teepee six inches longer in front than it is at back and gives you length at the door.



This is the bottom of the future teepee. Cut your cloth on the heavy pencil mark and hem on machine. You will now have two triangular pieces of cloth left. From these cut two smoke flaps marked A in diagram. They should measure as follows: H to B, four feet six inches; H to K, two feet; K to B.

four feet; with enough allowed for hem. Sew these in position as indicated in the diagram and hem up the edges.

Now begin at E; measure six inches each way on the edge of the cloth as shown on diagram; then measure one foot down into the cloth at right angles; then cut away as shown in sketch and hem it up, and reinforce at lower corner of cut with some scrap cloth. This will give you the triangle C in the diagram. At the point of C and at the framework of the teepee, being tied together with a rope or thong, half-hitched from one to the other, and the ends then fastened together. If windy weather prevails, a long end may be pegged down inside the tent at the back, thus anchoring the whole structure, but this is hardly necessary if camped on good pegging ground. The poles should be tied at a point that equals the distance from E to F. The two pieces marked B in diagram are simply flaps one foot

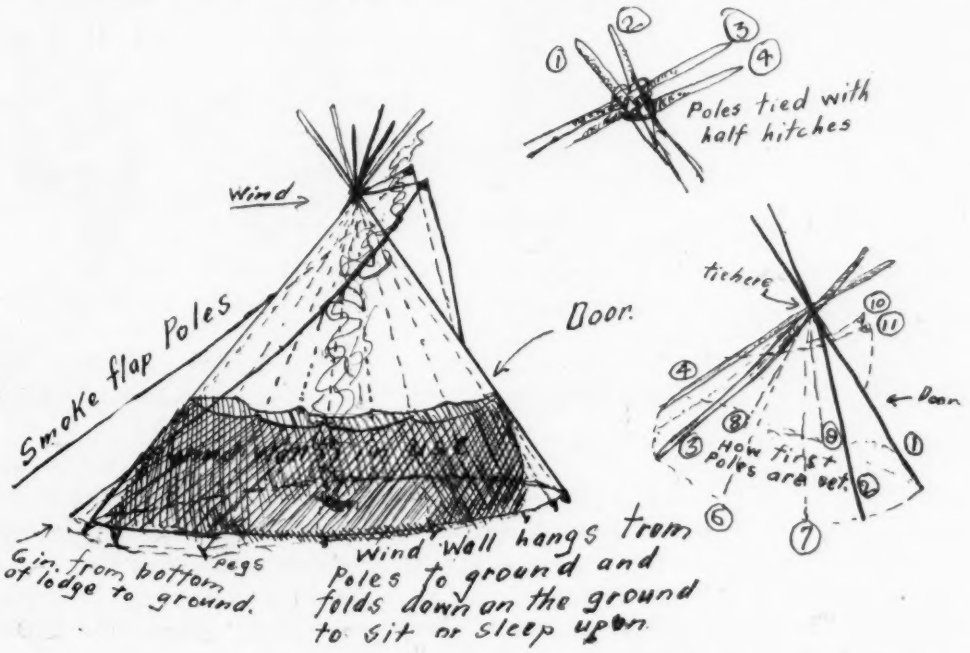


points of the smoke flaps marked H, sew canvas or leather pockets which will hold the ends of the poles when set up. The pocket at C will be on the inside and at H on the outside.

This allows the smoke flaps to be set as shown in the small sketch. The pocket at the point C is the one that holds the pole used to raise the teepee after the first four poles have been set in position, as indicated. These poles are the first ones placed when you camp and are the square, sewed along edge marked M, which fastens them to the teepee in such a way that they exactly overlap each other when the teepee is set up. These flaps should have four gaskets worked in them so that they come one over the other when the teepee is set up, then by inserting small sticks crosswise, the teepee is firmly fastened around the poles. To set up teepee raise four poles as shown in sketch, spread them out, insert ten-foot pole in pocket at C, raise

the teepee up and lay the top of this pole together with the teepee into the Y formed by the poles 3 and 4. This is the back of the teepee. Now take the edges around poles 1 and 2 and drive a stake fastening the points G of the teepee by means of the stake strings as indicated in diagram. Now go inside with poles 6, 7, 8 and 9 and place them in position as indicated, leaning the top of each into tops of the original four poles. Next place the ends of your smoke flap poles in flap pockets at H and raise the flaps into position. These should open "down wind" (on lee side) always, so the smoke will go out freely. Your tent is now up. Lace in the four sticks in flaps B and peg down at peg lines indicated on drawing. The bottom of the teepee proper will not reach the ground by 4 to 6 inches at the back, so the wind can circulate freely between the teepee proper and the wind wall, which is merely an extra piece of sheeting six feet wide by twenty long, with cords equi-distant along one edge to tie to the poles around the inside of the teepee at a point about three feet from the ground which will be above your head when sitting, and will reach down to the ground and double under and make you a ground-cloth.

A very small fire built in the center will keep you warm in very cold weather as the heat is reflected. Lay two three- or four-inch-thick logs and two cross-wise on them, about 1 foot apart; build your fire on these, pyramid fashion, each layer at right angles to the ones below, small stuff on top; it will draw well and two fires will see you through a night. Study the diagram and you can figure it out. The idea of the wind-wall is that it shuts off all draft from under the teepee and forces it up along the teepee wall to a point above your head, thus doing away with all drafts and giving a current of air that carries


Poles tied with half hitches
Wind
Smoke flap Poles
Door
6 in. from bottom of lodge to ground.
pegs
Wind wall hangs from Poles to ground and folds down on the ground to sit or sleep upon
Door
How first Poles are set.

A HOME-MADE TEEPEE—THE TIGHE KIND.

off all smoke. The wind-wall also gives you a floor to your teepee and reflects the heat down onto you. In hot weather the wind-wall will not be used, but makes a good fly for your dining room outside. Such a teepee will weigh about eight pounds with wind-wall. You can camp in it in all sorts of weather, rain, cold, heat or snow, and always be comfortable. It will cost from $5 to $8 to make, except in balloon silk. The peg strings at the bottom are tied into grommets inserted in the hem. Any woman can do the sewing on a machine, or your tent maker will run one up for you at little additional cost to the material.

It is best to waterproof it. You can also dye it light green or tan, if you care to, and can get a good dye that is fast. To waterproof use the sugar of lead and alum process, as it does not get hard like paraffine in cold weather, and is also porous and allows air to pass through the cloth, but is waterproof and will not absorb water, so your tent is not much heavier after a rain than before. I give herewith the process as given in Horace Kephart's book, "Camping and Woodcraft":

"Dissolve half-pound alum in four gallons boiling soft water; likewise half-pound of sugar of lead (lead acetate) in four gallons of water; let stand and settle; pour off clear liquid of each into a clean vessel; let stand a few hours; then pour off the clear liquid, and thoroughly immerse the tent in it, soaking thoroughly; then set up, stretch and dry. Sugar of lead is poisonous if taken internally."

It is an advantage to dye the tent, as it does not attract insects, flies or humans as does a white tent. It also prevents that white sun glare that is annoying to the tent-dweller when using the ordinary tent. The dyeing should be done before the waterproofing, and if you use leather for your flap pockets do not sew them on until after, as the boiling in the dye will spoil the leather. The bark of white oak, and some other trees, gives a good tan color when boiled, for dyeing. Teepees are not made by tent-makers, except to order.

THE THIEF

CHARLES H. LOCKWOOD

One sunny day in October a large, black bear shuffled over the hills in search of food. Occasionally he stopped

"HE DETECTED A SWEET SCENT."

near some blueberry or raspberry bushes and with his long, snakelike tongue he sucked off the choicest of the berries. There was no lack of them. The hills were literally covered with berries, but still the craving within him was not satisfied. Berries he had eaten by the hour and they tasted good, but he had overfed on them and this day he yearned for something more substantial and satisfying.

Nature had provided him with a wonderful appetite at this time of the year and he was constantly on the lookout for food. The long winter hibernation would soon come and then he must den himself up and sleep until the warm spring sunshine would melt its way through the snow over his den and awaken him; so there must be sufficient fat on his meat to feed and warm his body through this long sleep.

As he waddled on over the hills, the loose rolls of flesh beneath his fine, black fur rolled and juggled to the motions of his body, and his small, black eyes were always alert. Continually, he snuffed at the air, while every large stone or rotten log which he came to, had to be turned over or pulled to pieces in the hope of finding ants or other insects. Once he found a nest of ants in a rotten log and he quickly broke the log in pieces, catching the ants on his sharp tongue, and eating them alive.

Then traveling onward, he came to a high hill, and from its summit he gazed out upon a far-reaching stretch of open water. As his nostrils sniffed the fresh lake breeze he detected a sweet scent, which seemed to come from the forest below. It was very faint, but oh! how

"HE CAME TO A PATHWAY."

sweet and appetizing. Hastily descending the hill he came to a pathway. Here he discovered another strange scent. The

"HE PUT HIS PAWS AROUND A TREE AND HUNCHED UPWARD."

tracks were old, but caution is a salient feature of the wild nature, so the big bear turned into the forest, passing among the large trees like a shadow, while the soft moss which grew in abundance beneath the trees rendered his footfalls noiseless.

Coming out upon a runway at the lake shore, he again found those strange, peculiar tracks, which smelled old and faint, like the others. There was no immediate danger in such old signs, however, and somewhere near by was good things to eat—for had his sharp nose not told him so from the hilltop? Looking carefully around, then scanning the surface of the lake, the big bear snuffed at the tracks once more and hustled quickly along the runway.

He had traversed the shore trail but a short distance, when he came to a clear, running spring, and close by the spring he discovered a little boat hidden among the bushes. The boat was covered with a greenish looking paint substance which smelt good to the bear, so he put his sharp teeth through the frail craft in many places; but it only tasted of the wood, and wood, he knew, was not good to eat. So he turned the boat over with his big paw, and, finding nothing underneath, he again started out to hunt the location of the fragrance which had blown to him from the hilltop.

Soon he discovered an old campfire, but hunt as he would, he could not locate the real object of his search.

Once more he mounted a high hill in his effort to locate the treasure, and when on its summit he sniffed the breeze carefully. Again there came to his nostrils the sweet flavors of good things to eat. Far below him lay the matted treetops of the forest stretching away for miles along the rough shore lines of the lake. From somewhere in that matted forest came the food smell, and once more his little eyes twinkled mischievously as he picked his way to the lower valley.

Reconnoitering now very carefully, his sensitive nostrils soon located a place among the trees where the moss was badly disturbed and indented with the prints of the man tracks, but even here no trace of the mystery could be found. Seating himself on a little, dry hummock, he looked soberly around through the dark woods. He was used to the solitudes of the forest, for about him all was gloomy and quiet, save for

the slight rustling of the breeze through the foliage. Suddenly his sharp eyes detected a glimpse of unusual color, which fluttered for an instant from a green cedar over his head, and, directing his gaze upward he saw a great bulk of something hidden among the branches.

With the contagion of a new discovery he put his huge paws around the tree and hunched upward. As he went higher he caught the food smell strong and fresh and now for an instant he gazed at the whole bulk of some cruiser's cache, where it rested among the furry boughs of the fragrant cedar. For an instant only he gazed, then with one heave of his huge forearm he pushed the entire cache from where it rested between the forks of the tree to the soft moss below, scattering provisions of various kinds in rich profusion. He hardly stopped to back his way down the tree trunk, but landed with a slide and a bound into the very midst of the treasure. Bacon, sugar, dried fruit and ham—he quickly found it all and hastily transferred its location from where it lay on the moss to the hidden cavities of his own huge person. The last thing to occupy his attention was a sack of flour, and he stuck his face down into it, more because it was soft and felt good than because he was hungry.

Later in the day two cruisers found the overturned, tooth-marked boat and the plundered remains of their grubstake. About an hour later the waters of the lake parted to the pressure of their patched canoe, but back in the edge of the forest, where the big runway lay close to the water's edge, a fat, bulky, thieving-looking animal sat gazing out across the water from his leaf-covered retreat. His sharp eyes twinkled mischievously and his broad face was covered with the whiteness of flour.

"THE LAST THING NOTICED WAS A SACK OF FLOUR."

He saw the cruisers bend their energies to the paddle, but he was not afraid, for he knew that he had outwitted them, and he was filled with a great satisfaction.

OFFICIAL REPORT ON WYOMING ELK

Extracts from the findings of the special representative of the Biological Survey (U. S. Dept. of Agriculture) appointed to investigate the conditions of the elk of Wyoming.

EDWARD A. PREBLE

ASSISTANT UNITED STATES BIOLOGICAL SURVEY

That part of the valley of Snake River in Northwestern Wyoming usually called Jackson Hole has long been the principal winter home of large numbers of elk, or wapiti (Cervus canadensis). These animals, which spend the summer in the southern part of Yellowstone National Park and in the mountains south of it, are forced in winter to seek lower levels, where a lighter snowfall and a milder climate insure more favorable forage conditions. Their primitive winter range has gradually been reduced, until this basin has become their principal stronghold. Here, until recent years, the herds have fared well, except in an occasional abnormal winter; but with increased settlement in this valley has come depletion of the range by grazing. The elk have come down in their old or even in augmented numbers only to find their former haunts shorn of forage by cattle, and when unusual winter conditions have conspired with a lessened food supply, great suffering and loss of life have ensued. Such was the case during the winters of 1908-9 and 1909-10, and during that of 1910-11, when an almost unprecedented fall of snow following a dry summer covered to a depth of several feet the remnant of a scanty crop of grass, conditions became acute. The elk sought the valley in about their normal numbers, but a little earlier than usual, and before the winter was half over had suffered great loss. The state Legislature was appealed to and promptly appropriated money to buy food for the starving creatures. Moreover, the state, realizing its inability to cope with the situation unaided, presented a memorial to Congress asking for help, and $20,000 was appropriated by the government. The administration of this fund was intrusted to the Biological Survey, and to the writer was assigned the task of making the preliminary investigation.

Jackson Hole is the name commonly applied to that part of the Snake River Valley between Jackson Lake and the mouth of Hoback or Fall River. It is a basin about forty miles in length from north to south and averaging about fifteen miles in width and extends in a north-northeast and south-southwest direction. It has an altitude of about 6,700 feet at its north end and falls to about 6,000 feet at its southern extremity.

By far the greater part of the area embraced in the basin called Jackson Hole is covered by a fairly rank growth of sagebrush (*Artemisia tridentata* and *A. cana*). Large areas of this land have been cleared and under irrigation produce fine crops of alfalfa and timothy and fair yields of oats, barley and wheat. The altitude of the valley and the proximity of large areas of high

mountains cause frost to be common through May and in exceptional seasons in August. The shortness of the growing season prevents the successful raising of any but forage crops besides the hardier grains and roots, except in a few favored localities.

Bordering the valley on the west is the Teton Range, a succession of rocky crags with altitudes varying from about 10,000 to nearly 14,000 feet. These rise abruptly, affording a panorama whose equal in rugged grandeur is rarely seen. To the east the valley is bordered by foothills of the Gros Ventre Range, some of whose peaks reach an altitude of about 11,000 feet. These mountains are treeless above 10,000 feet.

In this fertile valley, with its luxuriant growth of forage and comparatively mild climate, most of the elk which summer in the adjacent mountains and in the great area of high country extending northward into the Yellowstone National Park have lately spent the winters.

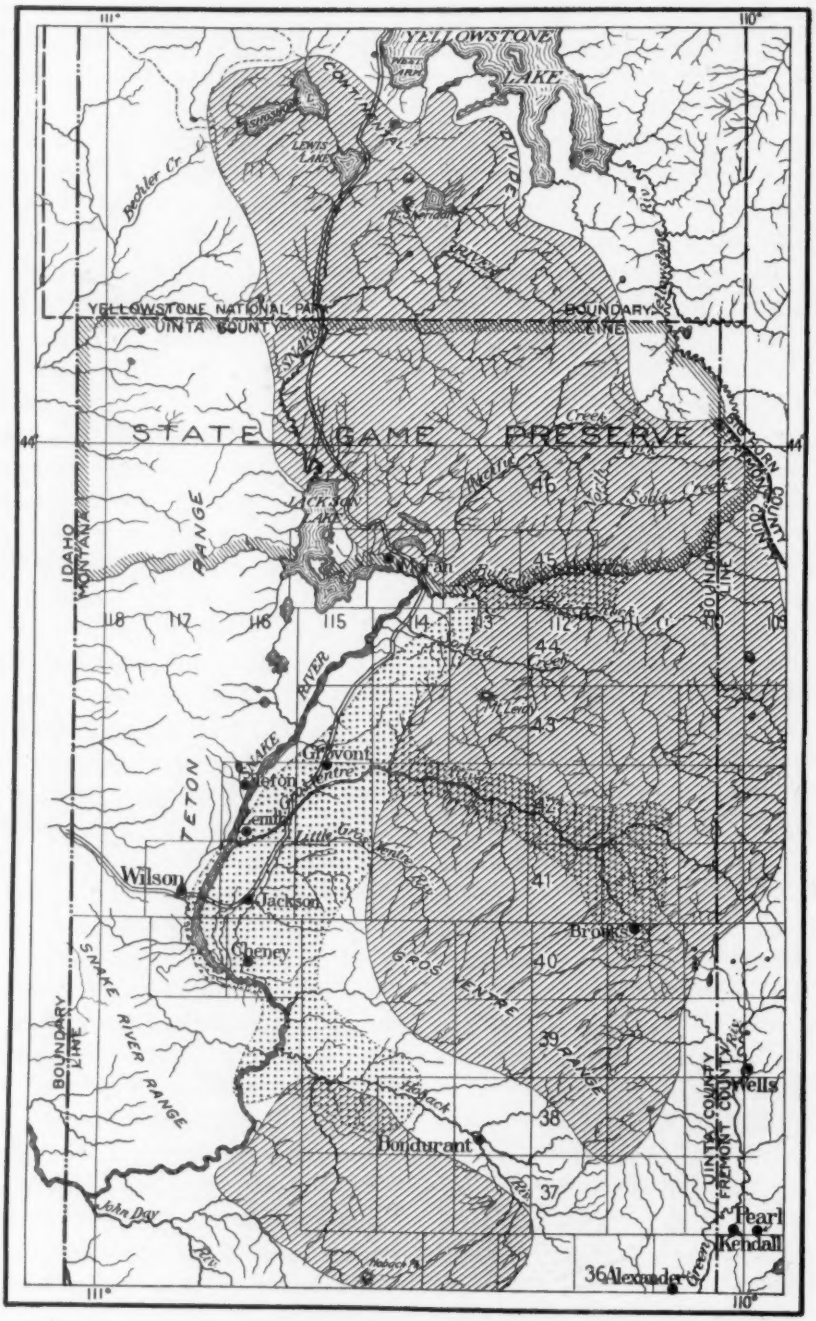
Some of the most intelligent residents of Jackson Hole have estimated that the value of the elk to the region is equal to the revenue derived from stock raising, which is the principal industry. The food value of the animals killed by residents is also very large. During the season of 1910, 413 resident licenses, each good for the capture of two elk, were granted in Jackson Hole. It is fair to assume that 800 elk, with an average value of $20, not counting the value of hides, horns and scalps, were taken under these licenses.

Any statement regarding the number of elk in the Jackson Hole region can be only approximate. This is evident since, out of the large number of estimates obtained from residents, the smallest and largest given by persons whose opportunities for intelligent judgment were about equal, varied as one to four. The migratory habits of the animals and the difficulty of traveling during the season when they are most easily observed makes it difficult to judge their numbers. Careful consideration of all the data obtained leads me to estimate at from 20,000 to 25,000 the number which habitually range in the region drained by Snake River south and west of the Continental Divide in the southern part of the Yellowstone National Park, most of which spend the winter in the Jackson Hole region as above defined.

Most of the residents consider that the elk have increased in numbers within the last ten years, but nearly all agree that there has been a decided decrease within the last three years. This is owing, of course, to the large number which died during these winters because of abnormal conditions.

It is estimated that a band of 20,000 elk will include about 6,625 cows 3 years old and over, of which about 75 per cent, or 4,968, will drop calves each year. If, then, the elk are not to fall below their present numbers, the total deaths from all causes must not exceed 4,968 per year; or, in other words, the total deaths each year may rise to 4,968 and still the elk will hold their own.

The total death roll is the result of four causes: (1) Natural causes, including accidents; (2) starvation; (3) wolves and other predatory animals; (4) hunting. It is evident that anything done to decrease losses from the first three causes will increase the number of elk that can be shot each year without diminishing the herd as a whole. But just in proportion as starvation or



PART OF NORTHWESTERN WYOMING, SHOWING APPROXIMATE RANGE OF ELK WHICH WINTER IN JACKSON HOLE.

Summer range. Winter range.

wolves claim a greater number of victims must the number shot be curtailed, or else the total of the elk will be diminished.

At present, probably about 2,000 elk a year are killed by hunters and about 1,000 by wolves. If these figures are approximately correct, and if it is also true, as claimed, that under normal winter conditions the elk hold their own notwithstanding these heavy losses, then it follows that of the calves dropped each year (approximately 5,000), at least 48 per cent live to be 3 years old. If the herd just holds its own, the death loss each year would be about 1,200, or one-fourth of the calves; 800, or one-fifth of the yearlings; 600, or one-fifth of the 2-year-olds, and 2,400 mature animals. Comparison of these figures with those of the losses by starvation of the calves during the past three seasons shows how rapidly the total number of elk must have diminished.

The two winters preceding the one of 1910-11 had been unusually disastrous to the elk, and some feeding had been done. When it became evident, following the crusting of the deep snowfall of early January, that the loss was likely to be unprecedented, the Legislature was appealed to and promptly made an emergency appropriation. As a result, about the 15th of February the feeding of hay was begun on as large a scale as possible. One of the results of feeding is that the animals become extremely tame, especially when approached only in vehicles or on horseback. This familiarity, however, is quickly lost when the feeding is discontinued, and within a few weeks those which ate freely from the hand of their benefactors become as wild as ever

The elk which winter in the Jackson Hole region come from the Gros Ventre and other ranges to the eastward, and from the mountains lying between Buffalo Fork of Snake River and Yellowstone Lake. It has been popularly supposed that most of the Jackson Hole elk summer in the Yellowstone National Park, but in reality about four-fifths of them breed and spend the summer entirely south of the park boundaries and therefore within the state of Wyoming.

The passage of bands of large animals through even a sparsely settled country naturally results in some damage to fences. The ordinary rail fence used for the confinement of stock offers no serious impediment to the elk, especially when snow lies deep on the ground and eddies of air about the corners of fences and in the lee of knolls form deep drifts

A conservative estimate places the number of elk which died of starvation in the Jackson Hole region during the winter of 1910-11 at some 2,000 to 2,500. Of these, by far the greater number were calves of the previous year. Probably 75 per cent of the calves which came into the valley in November and December had perished of starvation before the end of the following March. In some bands the loss of calves was as high as 90 per cent, but other bands suffered less. The greater part of the loss occurred before feeding began, but large numbers, both calves and older animals, were so weak that they died even when receiving what would ordinarily have been an abundance of food. Many, in fact, on being fed after a period of starvation, die almost immediately. There is evidently little difference in the relative mortality of the sexes in adult elk, and out of seventy-five calves examined for sex thirty-two were males and forty-three were females, indicating that in the case of the young the burden

on the sexes is not strikingly unequal.

About 75 per cent of elk cows over 2 years old bear young. The majority of calves are born between the 25th of May and the middle of June. Nearly all the testimony obtained on the subject is to the effect that only one calf is born at a time. A few thought that twins sometimes occur, but it seems probable that this opinion arose from the fact that a cow elk is frequently followed by two calves during the summer, the extra one being the deserted or orphaned offspring of another cow. Many of the hunters had examined large numbers of female elk with calf, and none of these ever found more than one fetus. The proportion of the sexes at birth is nearly even.

One of the most destructive natural enemies of the elk, the puma or mountain lion, is now eliminated from consideration, since it is practically exterminated in the Jackson Hole region. On the other hand, wolves, which were formerly unknown there, are common and increasing. They first appeared about ten or twelve years ago, coming in from the Green and Wind River region, probably following the introduction of stock. It is estimated that about twenty-five adult wolves now range in Jackson Hole. The damage inflicted by them on both horses and cattle is serious, and, as they seem to be able to kill elk at will, they must destroy a large number. They kill stock and game on the hills immediately about the settlements, both summer and winter, frequently two or more attacking the prey. They usually hamstring the elk, and after felling them make a meal from the eyes, the udder and other choice parts, and seldom return to the carcass, preferring a fresh victim.

The coyote, unlike the wolf, is almost certainly native to the region, but has increased greatly with settlement. Adult elk are seldom or never killed by them, but a few young calves fall victims.

The plans of the Biological Survey contemplated the removal of a number of elk to other states, where they could be liberated on suitably protected ranges and form the nucleus of new herds.

The problem of transportation is a difficult one, because the Teton Range, 2,000 feet higher than the valley of Snake River, must be crossed on the way to the railroad. Spring, moreover, when the snow is disappearing on both sides of the range and is softening and settling on the Teton Pass, is the most unfavorable time of the year for moving live animals. The facilities for transportation were not extensive, and the number captured, therefore, was necessarily limited by the accommodations at our disposal. A dozen of the more vigorous animals of various ages were selected from a herd being fed in the southern part of Jackson Hole, and on April 12th we started with them for the railroad. Hay or alfalfa was provided for them morning and night and water at least three times daily. They readily took both food and water and were given as much of both as they wanted.

Upon our arrival at St. Anthony, arrangements were made at once for shipping the animals. The National Bison Range at Ravalli, Mont., and the Wichita Game Preserve in Oklahoma had been selected as the places to be supplied, and the lot was divided between them. It is gratifying to report that the animals in both shipments reached their destinations in excellent condition and that the project of reestablishing the species in these depleted localities has been successfully inaugurated.

The establishment of a winter refuge where the feed can be preserved by excluding stock during the summer, is essential for the proper protection of the elk. Such a refuge should be of considerable size, should be situated in a valley which the elk naturally seek, and should comprise pasture lands, as well as meadows which will produce hay for feeding the animals after they have exhausted the available forage. An ideal situation would include also a tract of somewhat elevated land, to which the animals could retire for rest.

The Biological Survey looks on the establishment of one or more winter refuges as the best solution of the problem of properly caring for the elk in winter. An area in the lower part of the region is of prime importance, since there the greatest number of elk resort and there an area of a given size can be made to support the greatest number of animals On the other hand, the establishment of a second refuge in the Gros Ventre Valley would be comparatively inexpensive and would gradually be the means of detaining there in autumn a considerable number of the elk which would otherwise keep on to the lower country. It has been estimated that 600 tons of hay can be harvested on the claims now occupied on the Upper Gros Ventre, and this amount, with the available forage, would support more elk than now winter there. The number which might be supported on a properly managed refuge in the Jackson region would be limited only by the size of the reservation. It is earnestly recommended that at least one winter refuge for elk be established.

A MONTANA HUNTER, HIS AIREDALE DOGS, AND LIONS TREED BY THEM.

The cut shows Joe Waldbillig, a guide of Butte, Mont., and the result of a chase with his two Airedales, Mountain View Swan River Jim and Mountain View Wapiti. The former dog weighs nearly 70 pounds and is a beautiful specimen. We are indebted to Jas. G. Keefe, breeder of these dogs, Butte, Mont., for the photograph.

CLOSE VIEW OF THE HEAD OF THE SECRETARY BIRD, SHOWING QUILL-LIKE PLUMES.

THE SECRETARY BIRD

WALTER L. BEASLEY

Among the rare and remarkable birds which have just been received in the New York Zoölogical Park are the pair of secretary birds, male and female. These creatures are entirely new to the eyes of the American public, being the first live specimens to arrive and to be placed on exhibition in this country. The secretary is really a hawk, adapted especially for ground hunting. The male stands four feet high, the greater part of this being made up of legs and neck. Seen taking their long, stately strides in the outside run of the ostrich house, where they are quartered, with their fine ashy-gray plumage and tail, feathers two feet long, few would imagine that these curious long-legged birds are the champion snake killers of the world.

The bird gets its odd name from a crest of long, dark plumes rising from the back of the head which gives him a fanciful resemblance to a clerk having a bunch of quill pens stuck behind his ears. The naked skin of the face is yellow. The fine gray eyes have heavy, long lashes. In South Africa the birds are said to be of a considerable economic use to the community as a destroyer of venomous pests, for they kill and eat cobras, vipers and other poisonous reptiles.

The writer with camera had a special

opportunity to make photographs showing how this curious and wiry bird attacks and quickly makes a meal out of his victim. All its food must be alive. A garter snake was thrown some distance from the male secretary bird on the ground in the run. Unlike a hawk or vulture, he did not fly upon the prey at once, but cautiously approached the snake with wings partly outspread so as to be ready to escape any sudden lunge of the enemy. Still watching its movements, the secretary slowly circled around his antagonist, looking for an opening, but keeping well out of danger. Suddenly, like a flash, the bird raised and shot out one of his powerful feet, with sharp talons and struck the snake fairly on the head. This was quickly followed by another crushing blow, which proved a knockout.

THE ATTACK.

The Secretary delivers a quick, powerful blow with his foot on the head of the snake.

ABOUT TO SWALLOW HIS VICTIM.

Another 3-foot snake given to the bird proved more active than the first and showed a disposition to fight, making several angry lunges at the secretary, which dodged them in prize-ring style. In avoiding these, the bird put out its widespread foot to protect the abdomen. The secretary feinted and dodged for a minute or more, watching for a good opening. Suddenly up shot the heavy foot, and a sledge-hammer blow, surely aimed, struck the snake on the head, stunning and putting the reptile out of action. The talons were drawn together when the blow started, straightened out while in the air and were brought together slightly at the instant

MALE SECRETARY BIRD, 4 FEET HIGH.

of impact with the snake, so that the victim received not only the force of the blow but the piercing of the sharp claws.

When the snake lay quiet after the blows, the bird eyed it carefully for a moment to see if it was quite harmless, and then, lowering his head slowly, for a bit, he suddenly shot out his beak like an arrow and transfixed the snake just behind the head. After that the reptile was eaten with as little ceremony as a chicken swallows a worm.

In South Africa the secretaries are found in higher dry districts and travel in pairs, male and female. If disturbed they make off in a rush, using their wings to aid their legs, and their pace is fast. They seem actually to skim the ground when pursued. They seldom leave the ground, and if compelled to do so make only short flights. They build large, bulky nests, which are utilized at night as a roosting place. Where trees are to be had they select a place sixty or one hundred feet above the ground for the nests. These are built of sticks and sod and lined with grass, and measure as much as five feet in diameter and three feet in thickness.

As a rule, only two eggs are laid. Incubation takes six weeks. The young have to remain in the nest five or six months before they can walk on their long, slender legs, which are very brittle and easily break if the birds are forced to run before they are old enough.

THE FINAL ACT, SWALLOWING THE SNAKE.

AN INDIAN'S HUNT FOR GRUB

"HUNTER"

This story was told me by an old Alaska miner. I cannot tell it in his own language, but will give the substance of it the best I can in my own way:

"My pard and I went to Alaska with the rush. We went to Skagway and over the pass. We built a boat, and when the ice went out we went through the rapids and down the river in about the same way that hundreds of others did. We went down the river a long ways and the most of the others had stopped or gone on till we seldom saw any of the other gold seekers. Finally we commenced prospecting, and at last struck rich ground at the mouth of a small creek. The creek made a bend just as it came into the river, and ordinarily anyone going along the river would not have known that there was a creek there, and I don't suppose that a white man had ever been there.

"We rigged up a 'rocker' and went to work and soon were getting out more gold than either of us had ever expected to get. We had brought along quite a stock of grub and had killed some meat, but when we got to washing out that gold we did not take time to hunt, and soon our supplies began to run low. I tell you that when two men can take out from $300 to $500 per day they hate to quit to get meat. We had about made up our minds for one of us to quit work and hunt, when an Indian came into our creek in a little dugout canoe. He was about starved, and we fed him, although we would gladly have paid $25 for the grub he ate that night and morning. We had two good Winchester rifles and plenty of ammunition, and when that Indian saw the rifles I thought he would have a fit. He had an old Hudson Bay gun and no ammunition. We were in a moose country, and by signs he made us understand that if we would let him take a rifle and cartridges that he would go up the river and kill a moose and would give us half the meat. My partner thought that he would simply steal the rifle and never come back, but I gathered from the Indian that he had a squaw and children down the river that were starving, and I felt sure that he would be fair and divide the meat if he got any, so I gave him my rifle and ten cartridges and a little grub and away he went up the river in his little canoe. My partner gave me the laugh, and kept up a line of talk about how we would jerk part of that meat and how we would make 'mulligan,' etc.

"Just before dark the second day that Indian came paddling into the creek in the strangest craft that a white man ever looked at. He had killed two moose and skinned them; then he had sewn the hides together and fastened them over a framework that he made out of crooked spruce limbs and woven in alder sticks to keep it in shape; then the skins, drawn over the frame tight and sewn in place, made a boat that would carry the eight quarters of moose meat and himself. With his little canoe trailing behind he had paddled down the river and landed safely in our creek.

"Say, that meat looked good to us, and we had some cooked and were eating and feeding that Indian in short order. We wanted him to stay with us, but he shook his head and made us understand that his squaw and children

were hungry, so putting one quarter of meat in his canoe he prepared to start. We put in some flour and other things, and he said he would be back in two fingers, which meant two days, for the balance of his meat. He asked to take the rifle, which I let him do.

"That meat came at just the right time for us. We used our flour and other supplies sparingly, and that Indian kept us in meat all summer. When we left we gave him the rifle and all the cartridges we had, and also a lot of clothing and blankets."

Say, reader, we are inclined to boast of our high civilization and our great inventions and to look down on the unlearned, but let me ask you, where is there a college graduate who could kill two moose and make a boat from the skins that would carry the entire meat and himself down a great river in safety.

We can do many things and do them well. Other men whom we think much inferior to ourselves can do other things much better than we can. Let us give them due credit for the same.

Heart of the Woods

Deep silences within the solemn woods
Fall on the ear with echo faint and sweet,
And twilight dim from dawn till darkness broods,
And stillness surges with a pulse and beat.
Soft yields the springy moss below one's feet,
Drowsy the languid breeze that ebbs and flows;
With pine and balsam all the air is sweet,
Soothing the mind from action to repose;
Until the quiet on one's soul and senses grows.

Life is not absent, but invisible,
And speaks in murmurings of filmy wings;
And creatures fancy-born do also dwell
Here where the stillness speaks and silence sings.
Yonder's Orlando, cutting hearts and rings
Upon the huge trunks lifting heavenward;
And Robin Hood now passes, pauses—flings
His green-clad length upon the mossy sward;
And pictures in his mind Maid Marian's face adored.

But with the passing of the day, these pass;
And lo! the gnomes, the elves, the fairies spring
From shadowy depths upon the moonlit grass,
And dance, like shadows, in a magic ring.
High in the treetops, like a ghostly thing,
The night owl hoots, the fireflies' glowing flakes
Light the weird scene and flash on limb and wing.
Then suddenly the elfin bubble breaks.
And with a trembling sigh the pallid dawn awakes.

HELEN COALE CREW.

THIS PICTURE SHOWS THE PATH MADE BY THE BEAR WHEN HE DRAGGED TRAP AND 12-FOOT TOGGLE THROUGH THE THICKET. IMMEDIATELY BACK OF THE DOG CAN BE SEEN THE BROKEN-DOWN TREES.

WHAT A GRIZZLY BEAR CAN DO

W. B. SHORE, M. D.

On the 4th day of May, 1912, John Graham, for thirty years a hunter and trapper on the Upper Yellowstone, Montana, died from injuries inflicted by a big grizzly bear. Just how the whole thing happened and how the battle was fought no one will know, as there was no one present at the encounter, and John did not live to tell us; but the facts in the case, as near as we could tell from circumstantial evidence and deduction, were about as follows:

Several days previously John had seen two big grizzlies in the locality where he was trapping, so he set a trap, and the day before the accident he trapped and killed a fine specimen of grizzly. It is presumed the other bear is the one that killed him.

On the morning of the accident Graham and his partner, John Howell, were up before daylight, and after breakfast they started out. It was then just about good daylight. The two trappers separated. It was not very long after they had started out before Howell heard his partner shoot one time. He thought Graham had killed the bear, so he hurried down to help him skin out the brute. When he got to within fifty yards of where the trap was set he met Graham, who was covered with blood, staggering, falling and rolling in the snow He was trying to get to the cabin about a quar-

TOES FOUND IN THE TRAP.

They are the small toes of the left hind foot. String-like appendages at top are the ligaments.

ter of a mile from the scene of the accident. Howell immediately started for help and medical assistance.

When help arrived they found that Graham had made it to the cabin and was lying at the door on the outside. He had a wonderful amount of vitality and plenty of nerve to go that distance with a fractured skull and windpipe torn open so that he was breathing through a hole in his neck instead of his mouth or nose. His front teeth were torn out, his nose bitten off and arms, hands and neck badly torn and mutilated. He died within about three hours from the time he received the injuries.

We think that John, when he went to where he had set the trap, found the bear had dragged the trap and a 12-foot toggle through a thicket, tearing down good-sized trees. He followed the bear until he found him hung up in the thick timber. John then walked to within forty feet of the brute and shot at him once. He evidently crippled the bear. and probably knocked him down. The gun used by him was a 12-gauge Winchester shotgun, using buckshot. John thought he had killed the bear and he immediately took off a sack which was hung over his shoulder, containing his skinning knife, rock, hatchet, etc. We think that while he was taking this sack off over his head that the bear charged him and was upon him before the man realized what had happened. The gun was found lying flat in the snow about six feet from where the encounter took place. The gun had an empty shell in the barrel and three loaded shells in the magazine. The gun worked good, as we immediately threw a loaded shell in the chamber.

Graham was an old hunter, having killed a good many bear, and would not have lost his head or got rattled, but was just careless. The bear left two toes (left hind foot) in the trap. (See photo reproduction published herewith). He probably pulled his toes off when he

was shot as he had tramped around where the toggle was hung up between two large trees, which goes to show that he had been there quite a while and was probably in the trap when John shot him.

Some will ask why the bear left the man until he was dead. I think when he first came upon Graham he cuffed him, knocked him down, knocking the gun out of his hand at the same time.

THE X MARKS THE SPOT WHERE THE ENCOUNTER TOOK PLACE.

The bear then jumped upon the man, chewing him about the head and neck. It is natural for a man to put up his hands and arms to protect his face, which accounts for the injuries on his hands and arms. I think the man was rendered unconscious from the severe head injury, and when he lay still on the ground the bear thought him dead and slowly walked away. I think a bear will usually act that way, and I believe that this is the opinion of most hunters. Sometimes a bear can be chased away by beating him.

About twenty years ago an old prospector named J. S. Knowles, who lived near where this accident happened, shot a bear one day near his cabin. The bear fell down, and Knowles, thinking he had killed him, ran up to where the bear lay. The animal was not killed, but stunned, and on seeing the man jumped up and cuffed him, knocking him down. The bear then stood over the man and began chewing him. Knowles said some old trapper had told him that if anybody would punch a bear in the nose with his fist the bear would run away. Knowles says he hit the bear in the nose as hard as he could. The animal on receiving the lick grunted and ran away. Knowles got his gun, followed the bear and killed him. His hand was deformed for life as a result of the injury he received.

The bear that killed John Graham went down into the Park. After three days we obtained a permit from Colonel Bret, superintendent of the Yellowstone

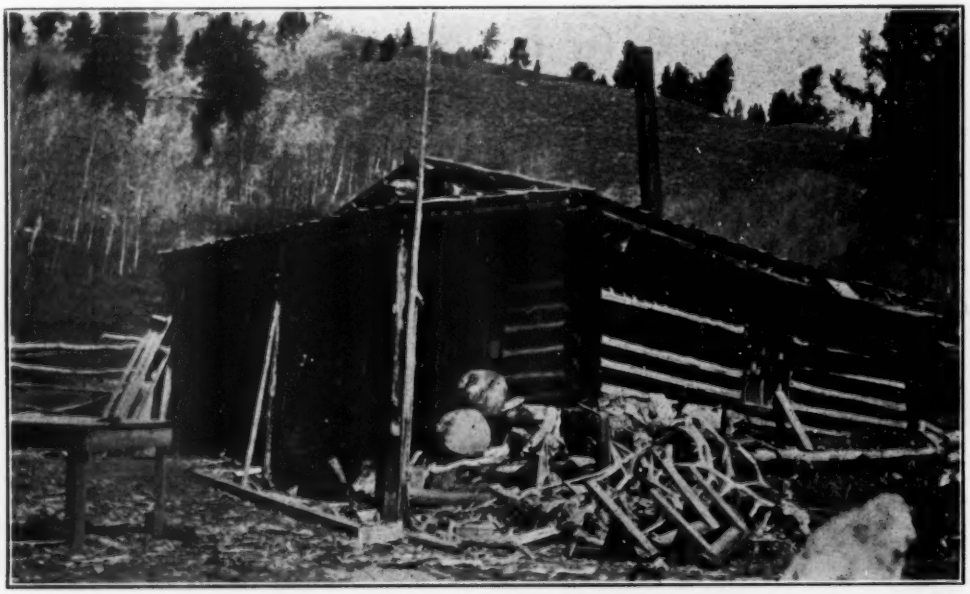
Park, to kill the animal. In the meantime about two inches of fresh snow had fallen and it was very hard to follow tracks. We trailed him for about one-half mile, as there was some blood on the trail. The bear would stop behind some large trees every few yards and watch the back trail. We could tell this by the pools of blood and tracks. He was very cautious, and if a man followed too close he would have had to kill that bear, and if not careful he would have been upon the beast before he knew it.

A man cannot be too careful hunting grizzlies, and it is a good thing to have a companion in case a gun would miss fire or something equally disastrous would happen.

After following the bear a half mile we got into a country that was full of other bears, and there were so many fresh tracks that we soon lost the old track. The track being so old and the country so full of fresh tracks, we did not try to use dogs, as we thought it would be useless.

This old trapper has always used a 12-gauge pump gun loaded with buckshot to kill trapped bear. He has killed many bears with this gun, and has often said that no bear could ever eat him up as long as he had that gun. No doubt that kind of a gun at short range would tear a bigger hole in a bear than a rifle, but I don't think many hunters care to get that near to a grizzly.

All the hunters in this section will now be looking for an old grizzy with only three toes on his left hind foot, and no doubt the drivers in the Yellowstone will be showing the tourists at the hotels in the Park "the grizzly that killed John Graham."



AN OLD HUNTER'S CABIN ON CREVASSE MOUNTAIN, WHERE JOHN GRAHAM DIED.

Pertinent at this time in connection with the preceding story of a remarkable encounter by Dr. Shore is a letter received by one of Montana's oldest guides, Mr. Tom Newcomb of Gardiner, who was on the scene

shortly after the accident happened. We extract the following from his letter:

"The killing of John Graham was what anyone might expect when they go hunting the grizzly with a shotgun. The old man never told anyone just how it happened. He was very badly chewed up. The bear must have been a large one for it looked as though he had taken hold of the old man by the head and shook him like a dog would a groundhog. The bear was caught in a trap by two hind toes and it looked as if the old man had walked up to within forty feet of the bear and shot him; then set his gun down by a tree and removed a strap from over his shoulder and laid it by the gun. At least they were found in that shape. The bear came to life and was on him before he knew it.

"I would advise anyone who goes after the grizzly bear to take the best gun he can get and be sure he can shoot where he wants to. A bear's neck is the only place to shoot at, especially if he is a large one. A shot through the neck is almost sure to knock him down and that gives a man a chance to get another shot if he commences to get up."

Out of Doors

Out-of-doors there are no books;
  In cloistered cells they crowd profuse.
Out-of-doors the Act is spoken;
In the cells the Word is token
  Of a dire misuse.

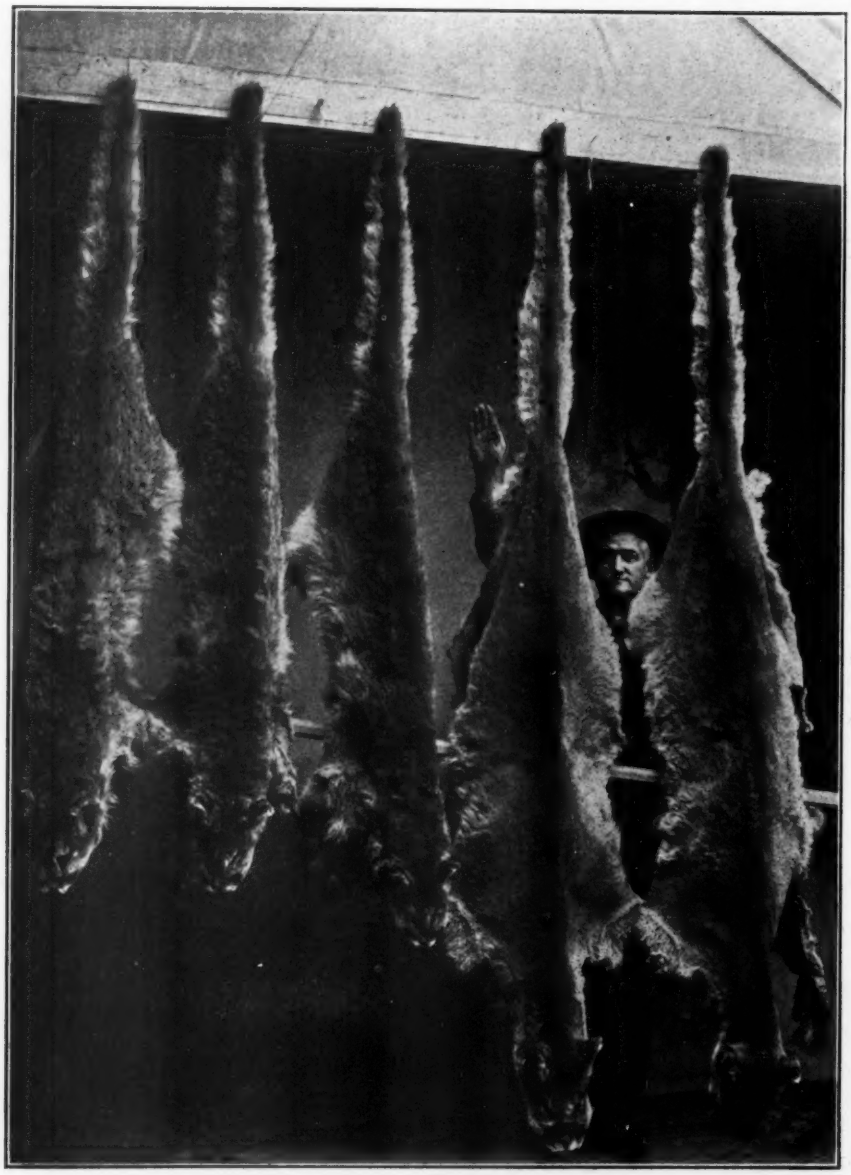
Out-of-doors a mighty temple,
  Boundless, broad and deep.
In the cells are walls so narrow
That they crush a soul and harrow
  Every pinion sweep.

Out-of-doors a mighty chorus,—
  Chord and pipe and reed.
In the cells a few notes crying,—
Forced to conform to the lying
  Of a sick soul's creed.

Out-of-doors the windows open
  Into endless space;
In the cells the stained glass darkens
Every vibrant ray and harkens
  To some dead man's face.

Out-of-doors great light is shining;
  In the cells is gloom uncouth;
Out-of-doors the Fact is showing
In the cells are candles throwing
  Shadows on the truth.

—FREDERICK WILEY.



THE AUTHOR AND SKINS SECURED ON THE HUNT.

A COUGAR HUNT IN IDAHO

FRANK E. BROWN

Having a couple of green Airedales, Dan and Jane, and a very fast Walker foxhound that I was anxious to try out on mountain lion, I proposed to my friend, Joe Mackey, who is mountain-bred and as game a sport as ever followed varmint dogs, that we go on a cougar hunt on the north fork of the Clearwater River (Idaho) approximately one hundred miles up that turbulent stream from its junction with the Snake. Joe's answer was, "Sure." We at once got busy cutting servicewood (Juneberry) for snowshoe frames. We bought a calf skin from the butcher and made two pairs of very strong, short snowshoes; built a toboggan out of spruce, 6½ feet long, 22 inches wide, 8 inches high, with shoes 4 inches wide and weight 22 pounds; purchased mackinaws, woolens, moccasins, etc., a 7x7 12-ounce wedge tent, plenty of woolen blankets, guns, kodak, cooking utensils and grub—the outfit weighing 250 pounds.

We left Lewiston, Idaho, on the 1:30 p. m. train on January 17, 1912, for Orofino, distant fifty miles up the Clearwater, expecting to meet a rancher there with whom it had been arranged to take us by team some twenty-five miles to the end of the road, where we would start with our toboggan, it not being possible to use pack horses on account of deep snow and no feed. We found the rancher, but on account of an overdose of what is locally known as "sheep-dip" (that being prohibition territory), he was uncertain as to whether he would be ready to start the next morning or not. In the morning he was still uncertain and we proceeded to hire the livery man to take us.

DAN.

On Friday morning, the 19th, we got up early and loaded the outfit on the toboggan and were off. The going was good. We made nine or ten miles and camped in three feet of snow; put up our tent, cut plenty of white fir boughs to keep the bed off the snow, and wood for fire, which we built in front of the tent. This made us very comfortable. The next day we crossed the divide between the main river and the North Fork. It being steep, we only made three or four miles and camped in four feet of snow.

Sunday, the 21st, we only went about three miles, as the going was very difficult, being over steep sidehills and brush. We saw one old cougar track and much deer sign; camped in three feet of snow. On Monday, the going being even harder than the day before, we

JANE.

only made about two miles; camped in two feet of snow only about a mile from the river.

The next day we got to the river about noon and found a vacant miner's cabin with good roof and open fireplace. This looked good to us, for it looked like a storm was coming up. We proceeded to build a good bough bed and fix up things. Hung a tarpaulin where the door once was and stretched ripped-open flour sacks over the windows.

The next morning, the 24th, it was raining and kept at it all day. We washed our clothes, etc. The 25th it rained all night and all day. We played checkers and cut wood in the rain. The 26th it still rained and the river was rising fast and ice was going out. On the 27th rain continued. River was full of floating ice.

The 28th still it rained, but we moved camp three miles up the river to a good cabin which had a larger and better fireplace and which was nearer the country we intended to hunt in.

On the 29th the rain seemed to be about over. Trout fishing in the river was fine. It was easily possible for one man with ordinary hook and line to catch one hundred pounds in six or eight hours. They were mostly cut-throat, with some Dolly Vardens, and ran from 10 to 18 inches in length.

On January 30th there was still a foot of old snow at the river and much more on the higher ground. We looked for cougar tracks all day, but without success. On January 31st we struck the right country and found seven cougar tracks a day or more old. The locality, which was about four miles northeast of our camp, was alive with white-tail deer. Cougar when traveling, if there are two or more, usually step exactly in each other's tracks, and it takes a sharp eye and much experience to tell that there are more than one. In one case we were following what looked to be one, but when coming to rough going across a little stream they commenced to spread out, and as they went up the bank on the opposite side there were five, and again at the top of the bank they were all stepping in each other's tracks.

February 2d we found tracks, but not fresh. Found many places where deer had been killed and eaten. It is not known how many deer a cougar will kill in a year, but it is known that the amount is enormous. At times they will eat every vestige of the deer except some of the hair, not even spilling one drop of the blood. On examination the contents of their stomach will show as great a proportion of cracked bones as there is gravel in a chicken's craw—bones, hair and fine being necessary for their digestion.

February 3d the snow was soft enough for tracks to show. We made an early start; saw deer every few minutes. About noon we found four fresh cougar tracks, and Dan and Jane certainly did get wild. Jane was in such a hurry to get loose that she bit Joe while he was unsnapping her chain, and ordinarily she is exceptionally friendly and affectionate. I had left the hound at camp, as I didn't want to bring her until we had the two Airedales broken so that I was certain they wouldn't run deer. In this we were entirely successful, as before the trip was over the dogs would refuse to look at a deer.

At once the chase was on, and it was worth the price we had paid to hear those dogs. They were running like quarter horses and giving tongue every jump. We followed as best we could through dense jungle, logs and over and around bluffs. It couldn't have been more than half an hour from the time the start was made until we could hear the dogs bark treed—Dan with his bass and Jane in a higher key. The sight we saw when we reached them was good to look upon—four mountain lions treed, each having selected a tree of its own—two on red firs, one on a cedar and one on a snag—but the trees were all within thirty or forty feet of each other. They were up from the ground from twenty-five to forty feet, except the one on the snag, which was only up ten or twelve feet. The dogs were barking their heads off, and we at once tied them, for in case of accidental wounding, a cougar would be certain death to dogs like these, if the dog could get to them. We at once got busy with the kodak and had taken the pictures of three of them when the one on the snag, which at this time had the snag between it and us, jumped off, and again we fell over each other a time or two getting the dogs untied. It had a good start. We at once proceeded to shoot and skin the three that were still in the trees which must have taken us nearly an hour. While we were doing this work we were feeling easy about the one that had jumped off the snag, as we could faintly hear the dogs barking treed.

When we got there we found it nearly at the top of a red fir about a foot in diameter. Again tying the dogs, we took its picture, shot and skinned it, arriving at camp about an hour after dark. The four skins with the heads and feet made some load.

Sunday, February 4th, we dressed hides, cleaned skulls, washed clothes, etc. The snow was frozen hard again. By February 5th the snow was soft enough in some places so that a track could be seen. We hunted for the first time on the north side of the river. We found two enormous cougar tracks about two days old and also an old bear track. It was late in the evening or we would have followed this bear track, for there is no doubt but that this bear had been drowned out by so much rain and melting snow and had again holed up.

February 6th. Snow very soft. We started early and hiked until 1 or 2 o'clock. Found no cougar tracks that were fresh, but lots of old signs where they had killed and eaten deer; also where they had cached them. We saw deer everywhere. About the middle of the afternoon, when we had nearly lost hope of finding a fresh track, we found one that was red hot and the chase was on again. As before, we only had Dan and Jane, because we thought it best not to use the hound at all. Jane's "Yipity,

yip, yip, yip,'' and Dan's ''Owh, owh, owh,'' told us surely of a ''smoking'' track. They did not run to exceed half a mile until they barked treed. When we reached them we found an enormous cat, fully the size of an African lioness, seventy-five or eighty feet from the ground on a red fir tree, three or four feet in diameter. There was a tall cedar which had lodged against the fir that the lion had run up. She was fat and sleek as a seal. Her coat glistened in the sunlight, and it was with much interest we watched her look down upon us with apparent unconcern. We tied Dan and Jane, and after taking a few snapshots at her with the kodak I shot the big varmint from nearly straight in under through the brisket with a .33 Winchester, soft point, the bullet stopping under the skin at the top of its shoulders, killing it instantly. In skinning, the knife cut through the hole the bullet had made, and as it didn't come out, no bullet hole can be found in this hide. On examination, after skinning, we found she contained four perfectly-formed young about the size of half-grown mice, proving in this case that mating must have taken place in January. Again we got to camp after night, but happy.

February 7th. Again we started early. Found three cougar tracks, but not fresh; couldn't tell how old. Snow very soft and ground bare in places. On February 8th it rained, so we stretched the hides. The largest as it lay on the floor before stretching measured 8 feet 3 inches in length, and the smallest, 6 feet 6 inches.

OUR RAFT.

In regard to the discussions in your magazine as to whether cougars scream, will say that I have hunted over Eastern Washington, Oregon and Northern Idaho for the last twenty-five years, and

I have never heard one scream. I have asked the question of many old hunters and trappers and have never heard an experienced man say that he had heard a cougar scream. The noise I have heard them make is similar to that which a man would make by filling his lungs and then expelling the air slowly but strongly through his mouth. If you understand me, you will remember that a house cat at times makes exactly the same sighing sound. Cougars are very dangerous to dogs and more or less so to all domestic animals, but I don't believe as a rule they are dangerous to man.

On February 9th it snowed in the morning and rained in the afternoon. Our provisions were about gone. We planned to desert our toboggan and make a raft and run it down the river to our home at Clarkston, Wash. On the 10th we cut the logs for it. On the 11th it rained all day, but we were able to work some on the raft. On the 12th we had finished the raft; made it out of dry cedar 10 feet wide and 42 feet long. We built it substantially and put a good oar on each end. This was necessary as the river is dangerous.

On February 14th, as the weather cleared, we started our raft for home at 7:40 a. m. on a bright, clear morning. The river was swift with plenty of white water. Saw deer frequently on the side-hills. Reached Lenore without serious accident, thirty miles from home, at dark.

On February 15th we left Lenore at 7 a. m. It rained all day, and we were well soaked when we landed our raft at home at 3 p. m., ending our trip. Had it not been for the unusual weather, no tracking snow from January 17th to February 15th, we would have gotten more cougar.

Only a Dog

Only a dog, and my day is done;
Dreaming I lie stretched out in the sun.
There's old Master Daniel on the porch, and I
Think he is dreaming of the days gone by.

Oh, we were prime hunters in the country then,
And Daniel was king of the hunter men.
I dream of those times, when at break of day,
With one blast on his bugle, and away, away.

I can see the hare in her desperate flight;
The nimble gray squirrel secure in the height
Of a hickory tree, the birds on the bough;
All were afraid; they are safe from us now.

Old Daniel and I, no more will we go
Through the leaves of the autumn or cold winter snow.
The white hunter of death is now on my track;
With fury relentless, he'll never turn back.

Oh, master, come near, there's a mist in the sky;
One caress of your hand ere I bid you good-bye.
Young Master Joey has gone on before;
Is he watching me die from the far-distant shore?

And soon, dear old master, you'll go over there,
And the squirrel and deer, the partridge and hare
Will be safe from pursuit of hunter and dog,
While the woodcock flies free o'er the fen and the bog.

A gasp and a quiver, a straight'ning of limb,
And all earthly pursuits are over for him.
But the voice of the hound and the bugle horn
Are echoing still in the breeze of the morn.

BUSH PHILLIPS.

No. 5

Write About the Hunt

I know all about poetry. People have been trying to define it for centuries—but now take notice. Here is the correct definition: "Poetry is that which comes from poets." That's easy. Wonder some one didn't think of it before. But first you have to get a poet! Of course! That's also easy. Take some long hair, a sad eye and a disinclination to work, and you have it. A girl and dyspepsia will help some, but the best judges of poets practically agree that these are not necessary. But the long hair is.

Not being able to write poetry myself, it naturally follows that I can tell just how to do it. Nothing is easier. But a short story—that is a different matter. I make my daily bread, and also room rent, via the sawed-off yarn, and think I know a little about putting the thing together; but if you want to know all about it, just ask a certain good friend of mine who honestly admits that he can't write, never could write, and never will write one. He even admits that he was a failure as a reporter—lasted two weeks, I believe, and has never since been able to get nearer a newspaper than the corner newsstand. That man has wasted tons of good advice on me, mostly about how to write a story. If I followed it I would starve to death, so I reverse his ideas and make a living. You see clearly that his advice is therefore valuable. His hobby is literature, and he says I'm a "barbarian"—That's the very word he used!—because my definition of literature prys checks out of the editors even if it does give my financial friend the earache. My definition? Certainly. "Literature is the business of turning hot air into cold cash." I'm writing literature right now, if you please—although the hair of my accomplished friend, when he reads these lines, will go right up through the top of his derby hat.

He, by the way, is a banker, and handles his profits with a scoop shovel; so I get back at him by writing him every week a letter on which he usually has to pay the excess postage, and in that letter I tell him just how to make money. He calmly steals about half my ideas, puts them into practice, makes a few thousands—then asks me why I don't do the same thing? I know more about finance than he does—he can't even balance his own books, and I never saw a mixed-up set of books I could not unravel—and he knows more about literature—and especially how it is written—than I do, but the cool fact remains that if we changed work each would soon starve to death.

All of which applies to each and all of us, just as each man's own particular business is the worst in the world. All of which leads up to the rather obscure fact that appreciation does not necessarily imply power to accomplish. A sign post cannot travel a road, but nevertheless it may give considerable good information concerning that road. But pointing out the way, and doing it, are slightly different things. This, however, at least is safe: If you can't do a thing, don't try it.

Which means? It means exactly this: When you start out to write up your hunting trip for Outdoor Life—don't do it. Just sit down and write a personal letter to Editor McGuire about what you did and where you went and what you saw and killed—then

give him perfect freedom to whip it into shape, and make a hunting story out of it. Try this method with your next account, and you will be surprised how much better it shows up in the magazine.

The great trouble with hunting stories is that most of them read alike.

But no two personal letters ever read alike—and most of us can write a letter. Stevenson gave the best advice about writing a letter: "It is like a brook: Begins anywhere, wanders everywhere, and ends nowhere." Now that is all right for a personal letter, but it is awful in print. Hence the need for not feeling badly if the editor does you the favor of working it over into something really readable and interesting You furnish the facts, he will supply the literature. He's full of it.

Remember, also, that many a thing is funny in itself, but that an account of it often makes mighty dismal reading. Don't try to be funny. Take the small boy's suggestion and "Don't get gay." Rather tell if there is good grass for the horses where you went, and if the drinking water is good or bad. The fact that Smith fell off his mule into the water and swore some is of no interest to the rest of us, no matter how funny it looked at the time. But all of us do want to know about the trail, just where to turn off to find a good camping ground, or if there is plenty of fire wood in that section. Also tell us how hot it is during the day, and if it freezes at night in June—or was it September you went? Then your "story"—as the city editor calls it—will be interesting, and the editor will call you blessed. It will also increase his circulation.

Have you ever noticed that over half the hunting stories published make no mention of the gun or cartridges used? And not one in a hundred tells us just what kind of a wound some particular shot made, or at what distance, and on what kind of game.

"I knocked him over with the second shot, he jumped up, ran into a little bunch of willows, and when he came out the other side I finished him with a shot behind the shoulder"—That is no way to write a hunting story. You were there, it was very interesting to you, but the mere fact that some man kills a deer does not set the world afire. Now if the lines ran something like this:

"A three-year-old buck was standing facing me at about 90 steps, and I hit him in the right foreshoulder, about four inches above the shoulder joint, with a .44-40 high-power, 200-grain, soft-nosed bullet. The shot tumbed him over, but instantly he was on his feet with a bound, and away into a patch of willows before I could reload my single-shot Winchester. When he came out I gave him a hard-pointed bullet through the ribs nearly back to the stomach, but he seemed to pay no attention to it. Then I let him have another soft-nose right under the left shoulder, and he seemed to collapse in mid-air, and barely kicked when he hit the earth.

"The first soft-nose in the shoulder had broken the shoulder blade and shattered it to pieces, but did not get into the chest cavity. I think he might have recovered from this wound. The hard-point went straight through him, but did not make a bleeding wound on either side, and would have proved fatal in a day or two. The last soft-point shattered a rib, tore up the tip of the lungs, mashed up the heart, and went out the other side, leaving a hole I could put my hand into, which bled freely. None of the entrance bullet holes bled at all, being stopped with hair. Etc. Etc."

Now we have something to interest us. From it we learn how the .44-40 high-power bullet acts on deer at about 100 yards. In the first indefinite account the fact that the deer was knocked over with a gun of some kind does not interest us any more than if it had been knocked down with a club, or the camp ax. In short, the important point is, not that you killed a deer, but how did you kill him.

In newspaper work the first thing to do is to teach a cub reporter to worship the "4-W." If he cannot get them under his skullskin he is worthless around a newspaper office. And these sacred "4-W" are "Who, What, When and Where." But for magazine, and practically all other kinds of writing, these four magic words are usually fatal. That is why so few newspaper men write for the magazines, they are "too journalistic," as the manuscript reader blithely pencils on the report slip. In magazine work you bow down to the words "Why and How." If you used them in a newspaper story the

city editor would kill you, in fact, he might discharge you.

It is given to but few to understand the secret of getting dramatic effects in words. If you are not a trained, and especially an experienced writer (here the two words mean practically the same thing) do not try to be humorous, dramatic, or grand. Cut out the scenery. And if the eagle starts to soar, turn the shotgun loose on him—quick. Just send in a plain unvarnished tale, as my friend Bill says, give all the information—notice that word, please—INFORMATION—you can, and let the editor do the rest. He will make a story out of it.

Don't try to inform a breathless world about how the stars twinkled—the stars have twinkled for some time, and we know all about that. Such flubdub the editor can stick in here and there, if he wants it, much as you poke a pair of extra sox into a vacant space in the clothes bag. He can manufacture it by the yard. The trick is easy, once you get onto the knack of it. Just breed Glittering Generalities to Personification, and you have it. The Congressional Record is stuffed with it, has the finest collection of such literature in existence. My literary friend, of whom I was speaking some lines back, please take notice.

But who reads the Congressional Record? So leave out the scenery, the funny part, and the swear words, and tell us if you have to pack in the horse feed, or if you can picket or must hobble your mounts.

Also tell us if it is best to ship the grub, or what parts of it, from the starting point, and whether or no we can buy flour and cartridges at the local stores. If you have been on a trip into the Washington region, for instance, you might remark that no cigarettes can be bought in that state, hence the camper had better bring along his own "makin's." If you go way up on the high tips after goats, tell us if you found enough brush up there to boil the tea and cook the bacon, or if one should take a spirit lamp.

Now tell us what kind of an outfit you took with you, and what parts you found were especially useful, and what parts needless. If you neglect to state whether you were hunting in Montana in December, or in Mexico in August, this information, of course, might be a trifle vague to the rest of us, so don't forget the time and the place. Also be very careful to tell us what things you lacked that you needed very much for that part of the country, and during that time of the year. It is details like this that make a good outdoor story.

Try it on yourself, for instance. Take Peary's account of his trip to the North Pole, or Shackleton's trip nearly to the South Pole. The fact that it rained on Tuesday, or that some one sprained his thumb are of interest only as they might bear on the success of the trip; but we are all deeply interested to know how cold it was in June or January? how thick the ice was? what they ate? how much? how they carried and cooked it? what they wore (not mere furs, but what kind of furs? how made? etc.) and a thousand and one other little details.

Nimrod, I suppose, wrote the first hunting story, and ever since then we have all being doing just like the people in the following poem:

THE CALF PATH.

One day through the primeval wood
A calf walked home, as good calves should,
But made a trail, all bent askew,
A crooked trail, as all calves do.
Since then two hundred years have fled,
And I infer the calf is dead;
But still he left behind his trail,
And thereby hangs my moral tale.

The trail was taken up next day
By a lone dog that passed that way;
And then a wise bell-wether sheep
Pursued the trail o'er vale and steep,
And drew the flock behind him, too,
As good well-wethers always do.
And from that day, o'er hill and glade,
Through those old woods a path was made,
And many men wound in and out,
And dodged, and turned, and bent about,
And uttered words of righteous wrath,
Because 'twas such a crooked path.
But still they followed—do not laugh—
The first migrations of that calf,
And through that winding wood way stalked,
Because he wobbled when he walked.

This forest path became a lane,
And bent and turned and turned again;

This crooked lane became a road
Where many a poor horse with his load
Toiled on beneath the burning sun
And traveled some three miles in one;
And thus a century and a half
They trod the footsteps of that calf.

The years passed on in swiftness fleet;
The road became a village street;
And this (before men were aware)
A city's crowded thoroughfare;
And soon the central street was this
Of a renowned metropolis,
And men two centuries and a half
Trod in the footsteps of that calf.
Each day a hundred thousand rout
Pillowed the zigzag calf about,
And o'er his crooked journey went
The traffic of a continent.
A hundred thousand men were led
By one calf near three centuries dead.

Now if you can write like that—well and good. I have nothing to say. You can write better than I can, so it is my place to keep still. But otherwise, you and I had better take a look at that calf, and ponder him when we try to be funny or romantic when we try to tell about that hunting trip last fall. Personally, I think that about nine-tenths of any hunting trip is getting ready to go, and talking about it after we get back. But maybe the other chap is different, and each one to his own idea, just so it does not injure the other fellow. The more people agree the less progress they make. If every one thought the .30-30 the best rifle in the world there would be no other rifles. They would come to a dead stop at the .30-30.

Come to think of it—People do wear clothes on a hunting trip. Yet how often in a hunting story do you see even a mention of them, except "I pulled on my old hunting coat that I . . ." etc., etc. Was it of canvas or leather or of wool? Was it satisfactory? Or did the scratching of the canvas leggings cause you not to see a deer on the whole trip, except at long range and on the jump?

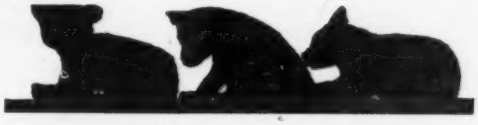
When I see the old, old line "The game was very wild" in a hunting story I always wonder what kind of foot gear and leg covering the hunter wore, and if he paid any attention to the wind. If you were dressed in canvas in a brush country in the fall of the year and wore those nice new lace boots, no wonder the game was wild. A hunter dressed thus should have the country flooded with chloroform before he leaves camp. Deer don't need ear trumpets, you know.

Also tell us about your bedding. Comforts? Blankets? How much did the bed weigh? Was it warm enough? Or did you need more? What kind of a tent? Did it rain most of the time? Or was the country dry with but a cold, heavy wind? And above all, how about the mosquitos? Are the horse flies bad? Is there poison ivy? Rattlesnakes? Loco? Cactus? Did you find a slicker or a poncho the most convenient?

Mosquitos interest us much more than Smith falling off his mule, because who wants to spend all the money he has saved all the year, and all he can borrow, and his two weeks' vacation, and travel 300 miles, just to be the chief dish at a buzz banquet?

Now let's round up all this into a working shortness: Don't try to be funny; don't try any fine writing; don't tell that you spent the rainy day oiling the harness; but do tell the hundred and one little details about country and outfit that you would write to a friend who is thinking of going to the same place next year. Just write that in a personal letter to the editor—and leave the rest to him. Try it.

The way the editor butchers my copy is a shame, but the queer thing about it is that he usually improves it. A good editor is usually a good axman. But as Mr. Dooley says, "It don't make no difference what kind of a doctor you have, just so you have a good nurse," so it doesn't make much difference what kind of an editor he is, just so he has a good proofreader.



I. T. Alvord and some of his trophies.

IN THE GAME FIELD

Outdoor Life will be glad to receive information at any time of any infraction of the game laws of any state. Such information will always be immediately communicated to the game department of the state in which the infringement is alleged to have been committed, after which it will be our aim to exercise a stringent espionage over the carrying out of the game department's duties in the premises. It is not our intention to divert such information from the game department channels, but rather to solicit such information in addition to what has already been sent to the department by the informant.

A Trip on Vancouver Island

We have received some inquiries regarding Vancouver Island, B. C., as a sportsmen's paradise, but not having hunted on this particular island ourselves, we referred one of these inquiries to a man who has probably had as much experience in the Northwest as any in the United States—Mr. I. T. Alvord of Kent, Washington.

Mr. Alvord, in the following letter, describes a trip which he took to this forest primeval some years ago, which will give readers a general idea of the island as a hunting country. We also take pleasure in publishing herewith a very good photograph of Mr. Alvord in his den, showing some of the trophies which he has killed. One of his friends who saw this photograph thought it should be called "Daniel in the Lion's Den," but as there are no lions in the picture we don't know whether to call it "The Bears in Alvord's Den" or "Alvord in the Bears' Den." All the trophies shown in this photograph, with the exception of the pheasant, were killed by Mr. Alvord. If we should photograph all the big game that he has killed, it would take a good many pictures of this kind to show it; and even then we would have to travel to the four corners of the country to collect all the trophies, as many of these repose in the homes of his friends, we ourselves having received a very nice specimen of the white goat which he killed, as a present from him. Mr. Alvord's letter follows:

"Regarding a description of our trip on Vancouver Island would say that we entered the island from Campbell River, near Seymour Narrows, and went up the river through its lakes to the mouth of Elk River, thence up Elk River to the center of the island. This was at that time the "Forest Primeval" with no marks of man's depredations other than trappers' blazes. We built four rafts to cross the lakes with of dry cedar logs, 32 feet long, three logs to each raft, the butts of two logs at one end of raft and the butt of the third log at the other end. The three logs chambered together, and made a raft of almost equal width the entire length. We fastened these together with a heavy cleat dove-tailed across each end of raft; then sharpened one end of raft for a bow and our 'ocean liner' was complete, and would carry four men and our outfit very nicely. It was propelled very easily with long paddles that we used while standing upright. The lakes are three in number and are the most beautiful bodies

of water I ever saw in the woods. The upper lake is about 12 miles long.

"We packed everything on our back, and it took us four days to come out, but took longer to go in. There were four of us in the party. We were after elk. We saw about twenty-five but none with horns. The snow was about a foot deep and had a hard crust frozen over it so we could not track a single animal but could follow a bunch as they broke a trail. We failed to connect with a bull, but got all the deer we could use; also one black bear and four gray wolves. The latter were shot by W. S. Flanagan and myself out of a pack of about a dozen which we rousted out from under some cedar trees on the bank of Elk River, where they had just finished eating a deer. This was one of the most interesting things that happened on the trip as the wolves could not hear us on account of the noise of the river until we were right on them, or within 30 yards of them, when one showed himself and was shot by Flanagan, and then the "eruption riz," for the wolves ran out from under those trees in every direction. We turned loose and made the woods ring while it lasted and gathered in four—one for myself and three for Flanagan, for the most of the ones I killed ran away, but I did my share of the shooting and had half of the fun.

"In the excitement I was nearly stepped on by a wolf. I was running as fast as I could to get around the roots of a large overturned tree, and it turned out a wolf was doing the same, only he was coming from the other side, each of us wholly unaware of the others' presence until we met in a head-on collision near the roots of the overturned tree. The wolf was going at the rate of 60 miles an hour, while I was running just as hard as he was, only not so fast. There was about 40 feet of space between us when first we hove in sight. We both whistled 'down brakes' at the same time, and reversed our engines, but on the hard, frozen ground and dry snow, there was no such thing as stopping. I dug my heels into the snow and clawed the air with my arms, but I slid so far along the track that I carried a flat wheel the rest of the trip.

"The wolf seemed to double up into a knot and came sliding towards me, his tail going round and round, while the snow flew in every direction. But it was no use; he couldn't stop and neither could I, but the wolf solved the problem of escape and went by to my left in a mighty bound, as high as my head.

"Flanagan saw the collision from a distance and afterwards told me it was one of the funniest things he had ever seen. The wolf had gone so far past me before I could shoot that he escaped.

"The island is thickly wooded and hard to navigate as the trails are practically ax marks. There were plenty of deer, a good many wolves, quite a few black bear and cougar, but we had no dogs and did not get any of the cougar.

We hunted from Oyster River north to the Campbell River and on Quinson River and clear to the center of the island and had one of the most enjoyable trips of my life. We had no trouble; there was plenty of game, and some very hard packing and a lot of work. This was in November and very wet. It is a hard place to hunt in at that time of the year and only good for those accustomed to hard usage as it is all woods, and then some more woods, and still woods until you strike the shore. Lots of rain and snow. From Campbell River north there is practically unbroken forest and anyone wishing to go there for an outing should go in September.

At the mouth of Campbell is a fine hotel called the Willows where "Izaac Waltons" go to catch salmon in the Narrows.

In the picture of my rugs you will see two wolf rugs. The one in the center was killed and presented to me by Flanagan. The black bear rug is my Vancouver Island bear, killed by myself, as were the rest of the trophies with the exception of the wolf and the pheasant in the back of the picture, which is a trophy of my son's."

The Porcupine as a Pest

Editor Outdoor Life:—I would like for some Christian friend to tell, if he can, the good qualities of a porcupine. I have about lost all my religion over this porcupine ques-

The Airedale as a sled dog.

After a fight with a porcupine, showing how to proceed.

Bark totally eaten off by porcupines.

tion, but for the benefit of unfortunate dogs that go against the porcupine I herewith enclose photo and the way to care for the dog when badly "quilled." I have known of valuable dogs being shot because their owners thought it impossible to do anything for them; but that is a mistake. First tie the dog securely, and if he wants to bite tie his mouth shut with a leather whang. Place him on a table and tie him down to it securely. It should be an old table with holes through it so rope can be passed over the dog's body, neck and legs and down through the holes. Make him fast—good and fast—and then with small plyers of any kind commence to pull, and in thirty minutes the dog will look better on the outside. Then with small rope or whangs, one around his upper and one around his lower jaw, pull his mouth wide open and you will find a sorry sight. But thirty minutes more and the dog is as good as new and much wiser. In very severe cases chloroform can be given. The dog in the picture belongs to Dr. J. M. Young of Pueblo, Colorado, and is most persistent in his endeavor to kill a porcupine, this being the eighth time I've had him on the operating table in three months. My own dog gave it up for a bad job after the second attempt.

Personally I think the porcupine a destructive pest without a single use or redeeming feature of any kind. They are very destructive on timber in this country.

I enclose photo of a pine tree, the bark being almost entirely eaten off by a large porcupine last winter. I killed him. A porcupine will live all winter in one tree. Let's hear from the man that knows something good of the porcupine.

Colorado. SAM STEVENS.

Game and its Enemies

Editor Outdoor Life:—Thinking that it may, perhaps, be interesting to readers of Outdoor Life, I will attempt to show how predatory animals have become a menace to the game of the West.

Since the coyote does more harm than all other predatory animals combined, I will begin with the coyote and deal chiefly with him and his work.

Up to twenty years ago it was a rare thing for a trapper, trapping back in the high mountains, to catch a coyote or even see the sign of one; and at that time we would never find any big game, except mountain sheep, and sometimes bears in dens, back in the mountains after the big snows came in the fall. Coyotes were not then so numerous in any place as they now are in almost every place, and they depended for a living almost entirely on their natural prey, which is rabbits and other smaller animals.

When domestic sheep were first taken into the high mountains for summer they were hardly ever molested by coyotes while back in the mountains, but each year that they went back the coyotes followed them further and preyed on them more extensively than before.

Twenty-five years ago sportsmen hardly ever went into the high mountains to hunt, and in the West there was very little hunting done for sport. Market and hide hunting was nearly all done on the fall and winter range, and when animals were killed and left on the range there were so many carrion birds and carnivorous animals to devour them that coyotes could not depend on wasted game animals for any part of their living.

Under conditions existing twenty-five years ago coyotes could not increase to any extent because a large per cent of the young ones, and those that were in any way enfeebled, perished during the hard part of each winter, and because a great many of the females were unable to obtain enough food to nourish a full litter of young.

During the past twenty-five years sportsmen have gone further into the mountains, in increased numbers, each year, till they now literally overrun the mountains during all of each hunting season. These sportsmen are, a large per cent of them, poor rifle shots and so extremely careless in shooting at game that they wound a great many animals that they don't get. There is also a small per cent, at least, of these sportsmen that

kill as much game as they can and leave the surplus where it falls.

In Wyoming most of the meat killed by sportsmen is left in the woods—I have the word of those that are supposed to know, that this is legal, so long as the sportsmen take the game to camp before throwing it away. Legal or not, it seems to be the prevailing opinion in the elk country that when a sportsman buys a game license it is his privilege to donate the meat that he kills to the coyotes—and, really, what use can a New York dude have for 1,500 pounds of meat in the wilds of Wyoming?

The excessive hunting of big game animals in the West late in the fall, especially while they are attempting to migrate, has caused them to stay back in the mountains till so late, each fall, that many of them get snowed in and perish during the winter and spring. Also those that are crippled during the hunting season stay back and perish when the snow gets deep.

Through the persistent use of poison by stockmen and others, carrion birds, skunks, wild cats, foxes, etc., have been nearly exterminated through most of the game country of the West. And bears have been so greatly reduced in numbers by trapping that they no longer act as scavengers in the mountains as they used to do. So that, now, coyotes can depend on almost getting a living by hunting for dead and wounded game animals, game animals that are snow-bound and helpless through starvation, dead domestic animals and domestic sheep.

On account of their natural enemies being destroyed, by poison and traps, squirrels, gophers, etc., have increased till a coyote can make a meal off them at any time that hunger drives him to such a diet.

In my business of trapping fine furs, I spend the winters in the highest, roughest portions of the Rocky Mountains. And, of late years, wherever I go I find the country overrun with coyotes at all seasons. Whenever I find a band of elk or deer snowed in (and I find lots of them) I find coyotes that are staying with them and living on such of them as happen to get down in the snow, or otherwise get into the coyotes' power. Whenever I find a band of female mountain sheep I find coyotes that never give them a day's peace and that kill one or more every time they can get them into deep snow or any distance away from the rocks.

The newly born of the deer family, and I think, of some other animals, give off so little scent that a dog may pass within a few feet of them without discovering their presence: I have made my dog lay down on one side of a log when there was an elk calf lying within a foot of the log on the other side, and the dog didn't know that the calf was there till I picked it up, and then he didn't know what it was.

This lack of scent in their helpless young is the main thing that has made it possible for the deer family to increase fast enough to continue in existence in spite of their enemies. But now, the coyotes have become so numerous, and scour the country so thoroughly, that they find many elk calves and other fawns in spite of their lack of scent. And the worst part of it is that the coyotes are intelligent enough to learn to track the mothers to find the young.

During the first half of June, this year, while looking for the body of a man that was lost here last fall, I have made a close search through several miles of down timber and second growth pine. In this timber a good many elk cows have calved during the first part of June. I have found as many places, this spring, where coyotes have killed elk calves as I have found of live calves.

The coyotes, by eating the eggs, have, of late years, done more harm to grouse and wild ducks in the state of Wyoming, and probably all over the West, than everything else combined.

Wolves, of course, do considerable harm, but they prey to a large extent on domestic animals, and are kept down by stockmen and forest rangers killing the pups every spring.

Mountain lions, according to their numbers, are the most destructive to game of anything in existence, but they are no longer found in large numbers over any great scope of country.

Lynx, wild cats and other small fry, do so little harm and are hunted and trapped so persistently that they may be entirely neglected.

If we desire to make life less pleasant for the coyote the first thing to do is to stop

killing his living for him and to make the closing date of hunting season early enough in the fall to give the game a chance to get over being frightened and get out of the high mountains before the deep snows come. Instead of hiring game wardens to hang around the settlements summers, and watch the people, hire a few good woodsmen to go back into the deep snow and look after the game winters when they can do some good by driving the game down, and by shooting or trapping any mountain lions that happen to be working on the game and by, at least, shooting at coyotes that are staying with snow-bound game.

Choose these men for their intelligence and experience and let them study the question and recommend desirable changes in the game laws.

Make stringent laws, with severe penalties, against wasting game under any circumstances. Make laws requiring the destruction of dead domestic animals. Keep domestic sheep off, and away, from the range of mountain sheep; and keep them off from certain portions of the range of other game animals. Bear in mind that while poison may sometimes kill a few coyotes it never kills many and always helps the coyote by destroying the things that he has to compete with in getting a living.

In regard to bounty: Any bounty on coyotes does some good, but to do much good it must be not less than $2 a head, and must be certain of payment, and paid without injuring the skin that it is paid on.

The only way that bounty paying would be entirely successful would be for all of the states—and it might even include Canada—that are infested with coyotes to pay a uniform bounty, and for all of them to demand the same token—say a certain foot or jaw—and this token would have to be attached—naturally—to every skin presented for bounty. The persons paying the bounty would detach the tokens and be required by law to deliver them to the county commissioners and they be required to destroy them. There would be no chance for anybody to perpetrate fraud in a bounty of this sort; and such a bounty would soon reduce the coyote to where he could do very little harm—and, so long as paid, keep him there.

Mountain lions are easy to get with dogs, but they are not numerous enough to make hunting them pay at anything less than $20 a head. They can be entirely exterminated by raising the bounty as they decrease in numbers.

Timber gray wolves can be exterminated in a few years by beginning with a good bounty and raising it as the wolves decrease.

Stockmen, everywhere, are in favor of bounty and if sportsmen, through their associations in the different states, will interest themselves with the stockmen there can be little doubt but what they can influence the legislatures of the different states to enact efficient and uniform bounty laws. And they—the sportsmen and stockmen—might go even further and help pay the bounty.

Some may say that at the present value of coyote skins, the skins alone should be a sufficient inducement for trapping them. This is true, but at the time the skins are prime, there is usually snow in the mountains, and coyotes are hard to catch in snow. The time to get coyotes is in the spring, summer and fall, and the way to get them is by trapping, and hunting the pups before they leave the dens.

In conclusion I will say that, while I am a trapper, I have no personal interest in a coyote bounty, because I can do better than trapping coyotes. I write this article because I happen to be in a position to understand the subject, and don't like the way the coyotes are taking the country.

Wyoming. A. C. ROWELL.

A Bear That Left No Tracks

Editor Outdoor Life:—About three weeks ago Wm. Kurtzer, known by his friends as "Wild Bill," emerged from the Beartooth Mountains with a bear story.

This story must be true as Bill has the bear skin and other things to prove it with.

Bill started out one afternoon to set his bear trap and soon came to a good location. He immediately set to work to build a "V" shaped pen; after finishing he threw in the bait and set the trap, attaching a twelve-foot pole to the chain.

Next morning Bill was out bright and early to see what luck he had had. On arriving at the pen he found the trap, the pole and the bait gone. There was no plain trail as you would think; no, sirree; it took Bill a good half hour to find the first sign, that was in the shape of an overturned pine needle, then another and so on.

Bill followed for perhaps five miles, not expecting to ever see the bar or his trap; but he was surprised to hear the jingling of the chain in the thicket. Then he turned and fairly flew to the cabin for his rifle, then raced back, located the bear and shot it through the head.

Two days after he was going over the same trail and was surprised to see the bark scratched for a considerable distance on two trees as if a bear had climbed up one tree and down the other.

Now, what Bill was puzzling his head about is how did the bear manage to travel with the bear trap and the pole without leavng a plain trail

"Seems as if th' brute chucked them on his back and carried 'em," said Bill after a moment of deep thinking.

The bear measured seven feet from tip to tip.

O. J. SALO.

Montana.

True Sentiments Regarding Running Deer With Dogs

Editor Outdoor Life:—For some time I have been very interested in the controversy of running deer with dogs, and in my opinion it should be stopped by law. For two years I lived in Tacoma, Wash., and have hunted in the Olympic mountains and around the Sound country generally, and although a great number of deer are killed annually I have never used a hound myself and am pleased to be able to say it. I have met a good many sportsmen in the woods who would shoot the dog rather than the deer if one should pass them whilst out hunting.

Also, I might mention that there is good duck and prairie chicken shooting in this part of the country (Alix, Alberta, Canada).

Canada. J. C. RAWSON.

New Game Regulations in Alaska

The following changes in the Alaska game laws have been reported to us from the Biological Survey, U. S. Dept. of Agriculture:

Open season for deer.—The season for killing deer in southeastern Alaska shall be limited to the period from August 15 to November 1, both inclusive.

Limits.—The number of deer killed by any one person during the open season shall be limited to 6.

Sale.—The sale of deer carcasses in southeastern Alaska shall be suspended until August 15, 1913.

Killing deer on certain islands.—The killing of deer on the following islands in southeastern Alaska: Duke Island, near Dixon Inlet; Gravina Island, near Ketchikan; Kruzof Island, west of Sitka; Suemez Island, near Klawak; and Zarembo Island, near Wrangell, is hereby prohibited until August 1, 1914.

Kenai Peninsula.—The killing of caribou on the Kenai Peninsula is hereby prohibited until August, 1914.

The shipment of carcases of moose and sheep for sale, from Seward or other points on the Kenai Peninsula, is hereby prohibited, and no carcasses of said animals shall be accepted for shipment to other points in Alaska unless accompanied by affidavit of the owner that they were not purchased and are not intended for sale.

Walrus.—The season for killing walrus in Bering Strait and in Bering Sea north of the mouth of the Kuskokwim River shall be limited to the period from May 10 to July 1, both inclusive. The killing of walrus in Bristol Bay and at points on the coast of Bering Sea, south of the Kuskokwim River, is hereby prohibited until August 1, 1914.

The regulations of March 6, 1909, and July 21, 1910, are hereby revoked.

Open Seasons for Game in the United States and Canada, 1912

(Compiled by Henry Oldys, C. E. Brewster and Frank L. Earnshaw).

The table on the opposite page shows the open seasons for game in the United States and Canada arranged on a uniform plan. The first date of the open season and the first date of the close season are given, so that close seasons may be found by reversing the dates. When the season is closed for several years the first date on which shooting is permitted, as October 1, 1913, appears in the table. A few unimportant species and the numerous local exceptions in Maine, New York, Wisconsin, Wyoming, Maryland, North Carolina, California, Washington and Oregon have been omitted. The state laws of Maryland and the most general of the county laws of North Carolina have been followed. All the omitted seasons are published in Farmers' Bulletin No. 470, "Game Laws for 1912," except the county seasons of Maryland and North Carolina, which are published in Posters No. 25 and No. 26 of the Biological Survey. These publications may be had free on application to the Secretary of Agriculture, Washington, D. C. The term rabbit includes "hare" of the Canadian laws; quail, the bird known as "partridge" in the South; grouse, includes Canada grouse, sharp-tailed grouse, ruffed grouse (known as "partridge" in the North and "pheasant" in the South), and all others members of the family except prairie chickens, ptarmigan and sage hens; introduced pheasant is restricted to the Old World pheasants; and goose includes "brant." States are arranged geographically and grouped according to the Hallock Code.

*Laws of 1912 not received. †Local exceptions. ‡Certain species. §Males only. ¶In New York the season opens or closes one day earlier when the opening or closing date falls on Sunday.

[e]California.—Deer (males only): First and Third districts, August 15-November 1; Sixth district, August 15-September 15.

[f]British Columbia.—South of lat. 55° seasons for Columbian deer, quail, grouse, prairie chicken, ptmarigan, pheasant, snipe, duck and goose are fixed by proclamation.

[u]Bear.—Alaska: Large brown bears, October 1-July 2.

[h]Moose and Caribou.—Alaska: North of lat. 62°, August 1-December 11; caribou on the Kenai Peninsula, August 20, 1912. Ontario: South of the Canadian Pacific R. R. between Mattawa and Manitoba boundary, November 1-November 16. Quebec: Moose, October 1-December 1 in Ottawa and Pontiac counties. Nova Scotia: Moose in Cape Breton, October 1, 1915.

[i]Elk.—Idaho, in Fremont and Bingham counties, September 1-January 1; in Bonner, Clearwater, Idaho, Kootenai, Latah, Nez Perces and Shoshone counties, protected to September 1, 1916.

[j]Elk and Sheep.—Wyoming: Only in Carbon, Fremont, Uinta and parts of Big Horn and Park counties.

[k]Sheep.—Alaska: North of lat. 62°, August 2-December 11. British Columbia: September 1, 1913, in Yale, Okanagan and Similameen districts; no open season south of the Canadian Pacific R. R. between the coast and the Columbia River, from Revelstoke to the international boundary.

Region	No.	State.	Big Game: Deer.	Big Game: Moose.	Upland Game: Rabbit.	Squirrel.	Quail.	Grouse.	Prairie Chicken.	Introduced Pheasant.	Wild Turkey.	Dove.	Woodcock.	No.
NORTHERN	1	Maine	Oct. 1-Dec. 15	Oct. 15-Dec. 1	Sept. 1-Apr. 1	Sept. 1-Nov. 1‡	No open season	Sept. 15-Dec. 1		Apr. 28, 1915		No open season	Sept. 15-Dec. 1	1
	2	New Hampshire	Oct. 1-Dec. 1	No open season	Oct. 1-Apr. 1	Oct. 1, 1913	Oct. 1-Dec. 1	Oct. 1-Dec. 1		No open season		No open season	Oct. 1-Dec. 1	2
	3	Vermont	Nov. 15-Nov. 26	No open season	Sept. 15-Mar. 1	Sept. 15-Dec. 1	Sept. 15-Dec. 1	Sept. 15-Nov. 15		Oct. 1, 1913		No open season	Sept. 15-Nov. 15	3
	4	Massachusetts	Nov. 18-Nov. 24		Oct. 16-Mar. 1	Oct. 15-Nov. 16	Oct. 12-Nov. 13	Oct. 12-Nov. 13	No open season	Permit	Sept. 1, 1915	No open season	Oct. 12-Nov. 13	4
	5	Rhode Island	No open season		Nov. 1-Jan. 1	Nov. 1-Jan. 1	Oct. 15-Dec. 16	Oct. 15-Dec. 16		No open season		No open season	Oct. 15-Dec. 16	5
	6	Connecticut	June 1, 1917		Oct. 1-Jan. 15	Oct. 8-Nov. 24	Oct. 8-Nov. 24	Oct. 8-Nov. 24		Oct. 8-Nov. 24		No open season	Oct. 8-Nov. 24	6
	7	New York	Oct. 1-Nov. 16	No open season	Oct. 1-Jan. 1	Sept. 16-Nov. 1	Oct. 1-Nov. 16	Oct. 1-Dec. 1		Oct. 3, 10, 17, 24, 31		No open season	Oct. 1-Nov. 16	7
	8	Long Island	No open season		Oct. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1		Nov. 1-Jan. 1		No open season	Oct. 15-Dec. 1	8
	9	New Jersey	Nov. 1-Nov. 6		Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	Nov. 1-Jan. 1	No open season	Oct. 15-Jan. 1	9
	10	Pennsylvania	Nov. 15-Dec. 1		Nov. 1-Dec. 16	Nov. 1-Dec. 16	Nov. 1-Dec. 16	Nov. 1-Dec. 16		Nov. 1-Dec. 16	Nov. 1-Dec. 16	Sept. 1-Jan. 1	Oct. 1-Dec. 1	10
	11	Delaware			Nov. 15-Jan. 1	Sept. 15-Jan. 1†	Nov. 15-Jan. 1	Nov. 15-Jan. 1				Aug. 1-Jan. 1†	July 1-Sept. 1	11
	12	Maryland	Local laws		Nov. 1-Dec. 25	Sept. 1-Dec. 2	Nov. 1-Dec. 25	Nov. 1-Dec. 25			Nov. 1-Dec. 25	Aug. 15-Dec. 25	Nov. 1-Dec. 25	12
	13	Dist. Columbia	Sept. 1-Jan. 1		Nov. 1-Feb. 1	Nov. 1-Feb. 1	Nov. 1-Mar. 15	Nov. 1-Dec. 26	Sept. 1-Mar. 15		Nov. 1-Dec. 26	No open season	July 1-Jan. 1	13
	14	Virginia	Sept. 1-Dec. 1		Nov. 1-Feb. 1	Five local laws	Nov. 1-Feb. 1	Nov. 1-Feb. 1			Nov. 1-Feb. 1		Nov. 1-Feb. 1	14
	15	West Virginia	Oct. 15-Dec. 1			Sept. 1-Dec. 1	Nov. 1-Dec. 1	Oct. 15-Dec. 1		No open season	Oct. 15-Dec. 1	No open season	July 15-Dec. 20	15
	16	Kentucky	Sept. 1-Mar. 1		Nov. 15-Sept. 15	Nov. 15-Feb. 1	Nov. 15-Jan. 1	Nov. 15-Jan. 1		No open season	Sept. 1-Feb. 1	Aug. 1-Feb. 1	June 20-Feb. 1	16
	17	Ohio			Nov. 15-Dec. 5	Sept. 15-Oct. 21	Nov. 15-Dec. 5	Nov. 15-Dec. 5		Nov. 15, 1913		Sept. 1-Dec. 5	Sept. 1-Dec. 5	17
	18	Michigan	Oct. 15-Dec. 1	No open season	Oct. 15-Mar. 2	Oct. 15, 1914	Oct. 15, 1915	Oct. 15-Dec. 1	No open season	Nov. 1, 1915	No open season	No open season	Oct. 15-Jan. 1	18
	19	Indiana	No open season		Nov. 10-Oct. 1	July 1-Oct. 1	Nov. 10-Jan. 1	Nov. 10-Jan. 1	Mar. 6, 1915	Mar. 6, 1915	No open season	No open season	July 1-Jan. 1	19
	20	Illinois	June 15, 1919			June 1-Nov. 16	Nov. 11-Dec. 10	July 1, 1915	Nov. 17-Nov. 18	July 1, 1913	July 1, 1913	Aug. 2-Nov. 30	July 1, 1915	20
	21	Wisconsin	Nov. 11-Dec. 1	No open season	Oct. 10-Feb. 1†	Oct. 10-Feb. 1†	Oct. 1, 1915	Sept. 10-Dec. 1‡	Sept. 10-Oct. 1†	Oct. 1, 1915		No open season	Sept. 10-Dec. 1	21
	22	Minnesota	Nov. 10-Nov. 30	Nov. 10-Nov. 30			Oct. 1-Dec. 1	Oct. 1-Dec. 1‡	Sept. 7-Nov. 7	No open season		Sept. 7-Nov. 7	Sept. 7-Nov. 7	22
	23	Iowa	No open season			Sept. 1-Jan. 1	Nov. 1-Dec. 15	Nov. 1-Dec. 15	Sept. 1-Dec. 1	Oct. 1, 1915	Nov. 1-Dec. 15	No open season	July 10-Jan. 1	23
	24	Missouri	Nov. 1-Jan. 1			July 1-Dec. 20	Nov. 1-Jan. 1	No open season	No open season	No open season	Nov. 1-Jan. 1	Sept. 1-Jan. 1	No open season	24
	25	Kansas	Mar. 24, 1931			Sept. 1-Jan. 1‡	Nov. 15-Dec. 2	Oct. 1-Nov. 2	Oct. 1-Nov. 2	Mar. 24, 1917				25
	26	Nebraska	No open season			Oct. 1-Dec. 1	Nov. 1-Nov. 16	Sept. 1-Dec. 1	Sept. 1-Dec. 1	No open season	No open season	July 15-Sept. 1		26
	27	South Dakota	Nov. 1-Dec. 1				Oct. 1, 1912	Sept. 10-Oct. 10	Sept. 10-Oct. 10	Jan. 1, 1915		No open season	Sept. 10-Oct. 10	27
	28	North Dakota	Nov. 10-Dec. 1				No open season	Sept. 7-Nov. 2	Sept. 7-Nov. 2	No open season		No open season	Sept. 7-Nov. 2	28
	29	Montana	Oct. 1-Dec. 1	No open season			No open season	Oct. 1-Nov. 1	Oct. 1-Nov. 1	No open season		No open season		29
	30	Wyoming	Sept. 1-Dec. 1	Sept. 1, 1915			Sept. 25-Dec. 1	Sept. 25-Dec. 1†	Sept. 25-Dec. 1	Sept. 25-Dec. 1		No open season		30
	31	Colorado	Oct. 1-Oct. 7				Oct. 1, 1924	Aug. 15-Oct. 11	Aug. 15-Oct. 11	Sept. 1, 1914	No open season	Aug. 1-Sept. 1†		31
SOUTHERN	32	North Carolina†	Local laws			Local laws	Nov. 1-Mar. 1	Local laws			Nov. 1-Mar. 1	Nov. 1-Mar. 1	Local laws	32
	33	South Carolina	Sept. 1-Jan. 1				Nov. 15-Mar. 15†				Nov. 15-Mar. 15†	Aug. 15-Mar. 1	Sept. 1-Feb. 1	33
	34	Georgia*	Oct. 1-Jan. 1			Oct. 1-Jan. 1	Dec. 1-Mar. 1	Dec. 1, 1916		Dec. 1, 1916	Dec. 1-Mar. 1	Dec. 1-Mar. 1	Dec. 1-Jan. 1	34
	35	Florida†	Nov. 1-Feb. 1			Local laws	Nov. 1-Mar. 1			Nov. 1-Mar. 1	Nov. 1-Mar. 1			35
	36	Alabama	Nov. 1-Jan. 1			Oct. 1-Mar. 1	Nov. 1-Mar. 1	Dec. 1-Dec. 15		Dec. 1-Dec. 15	Dec. 1-Apr. 1	Aug. 1-Mar. 1	Sept. 1-Mar. 15	36
	37	Mississippi	Nov. 15-Mar. 1				Nov. 1-Mar. 1				Jan. 1-May 1	July 1-Mar. 1		37
	38	Tennessee	Oct. 1, 1915			Local laws	Nov. 1-Feb. 1	Nov. 1-Mar. 1		Dec. 1-Jan. 1	Nov. 1-Mar. 1†	Aug. 1-Apr. 15†	Oct. 1-Apr. 15	38
	39	Arkansas	Sept. 1-Feb. 1†			Four local laws	Nov. 1-Mar. 1†		Nov. 1-Dec. 1†	Mar. 14, 1913	Sept. 1-May 1	No open season		39
	40	Louisiana	Local laws				Nov. 15-Mar. 1	Dec. 1, 1915	Dec. 1, 1915	Dec. 1, 1915	Nov. 15-Apr. 1	Sept. 1-Mar. 1	Nov. 15-Feb. 1	40
	41	Texas	Nov. 1-Jan. 1				Nov. 1-Feb. 1		Nov. 1, 1916	Nov. 1, 1916	Dec. 1-Apr. 1	Nov. 1-Feb. 1		41
	42	Oklahoma	Nov. 15-Dec. 15				Nov. 15-Feb. 1	No open season	Sept. 1-Nov. 1	Nov. 1, 1914	Nov. 15-Jan. 1			42
	43	New Mexico	Oct. 1-Nov. 16				Nov. 1-Feb. 1‡	Sept. 1-Nov. 16	June 14, 1917	June 14, 1917	Nov. 1-Jan. 16	July 1-Oct. 1		43
	44	Arizona	Oct. 1-Dec. 16				Oct. 15-Feb. 2‡	No open season		No open season	Oct. 1-Dec. 16	June 1-Feb. 2		44
PACIFIC	45	California*	July 1-Sept. 1		July 31-Feb. 1‡	Sept. 1-Jan. 1	Oct. 15-Feb. 1	Sept. 1-Dec. 1		No open season	No open season	July 15-Oct. 1		45
	46	Nevada	Sept. 15-Oct. 15				Oct. 15-Jan. 16‡	Oct. 1-Jan. 2	Oct. 1-Jan. 2	No open season			Sept. 15-Mar. 16	46
	47	Utah	Oct. 15-Nov. 15				Oct. 1-Nov. 1†	Mar. 11, 1913	Mar. 11, 1913	Mar. 11, 1913		Aug. 1-Dec. 1		47
	48	Idaho	Sept. 1-Dec. 1	No open season			Nov. 1-Dec. 1	Aug. 15-Dec. 1‡	No open season	No open season		July 15-Dec. 1†		48
	49	Washington	Sept. 1-Nov. 1	Sept. 15-Nov. 1			Oct. 1-Jan. 1†	Oct. 1-Jan. 1†	Sept. 1-Oct. 16†	Oct. 1-Jan. 1†		No open season		49
	50	Oregon	Aug. 1-Nov. 1			Oct. 1-Jan. 1‡	Oct. 15-Nov. 15	Oct. 15-Nov. 15	Sept. 1-Oct. 15†	Oct. 15, 1913		Sept. 15-Jan. 1		50
	51	Alaska	Aug. 15-Nov. 2	Aug. 20-Jan. 1				Sept. 1-Mar. 2						51
CANADA	52	Br. Columbia†	Sept. 1-Dec. 16	Sept. 1-Jan. 1	Sept. 1-Jan. 1		No open season	Sept. 15-Apr. 1	No open season	No open season				52
	53	Yukon*	Sept. 1-Mar. 1	Sept. 1-Mar. 1				Sept. 1-Mar. 15	Sept. 1-Mar. 15					53
	54	Alberta*	Nov. 1-Dec. 15	Nov. 1-Dec. 15				Oct. 1-Nov. 1	Oct. 1-Nov. 1	No open season				54
	55	Saskatchewan*	Dec. 1-Dec. 15	Dec. 1-Dec. 15				Oct. 1-Nov. 1	Oct. 1-Nov. 1	No open season				55
	56	Unorganized Ter*	Dec. 1-Apr. 1	Dec. 1-Apr. 1				Sept. 1-Jan. 1	Sept. 1-Jan. 1					56
	57	Manitoba*	Dec. 1-Dec. 15	Dec. 1-Dec. 15			Aug. 1-Jan. 1	Oct. 1-Oct. 20	Oct. 1-Oct. 20	Oct. 1, 1920		No open season	Aug. 1-Jan. 1	57
	58	Ontario	Nov. 1-Nov. 16	Oct. 16-Nov. 16	Oct. 1-Dec. 16	Nov. 15-Dec. 2	Nov. 15-Dec. 2	Oct. 15-Nov. 16	Oct. 15-Nov. 16	Sept. 15, 1915	Nov. 15-Dec. 2	No open season	Oct. 1-Nov. 16	58
	59	Quebec	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Dec. 1-Feb. 1†			Sept. 1-Dec. 15†					Sept. 1-Feb. 2	59
	60	New Brunswick	Sept. 15-Dec. 1	Sept. 15-Dec. 1				Sept. 15-Dec. 1					Sept. 15-Dec. 1	60
	61	Nova Scotia	Oct. 1, 1915	Sept. 16-Nov. 16†	Nov. 1-Mar. 1		Aug. 15-Mar. 1	Oct. 1-Nov. 1‡		No open season			Sept. 1-Mar. 1	61
	62	Pr. Edward Isl.*			Nov. 1-Feb. 1			Oct. 15-Nov. 15					Sept. 1-Jan. 1	62
	63	Newfoundland*						Sept. 20-Dec. 15						63

SHORE BIRDS AND WATERFOWL.

Region	No.	State.	Plover.	Curlew.	Snipe.	Rail.	Duck.	Goose.	Swan.	No.
NORTHERN	1	Maine	Aug. 1-Dec. 1		Aug. 1-Dec. 1		Sept. 1-Jan. 1†‡			1
	2	New Hampshire	Oct. 1-Feb. 1†		Oct. 1-Dec. 1	Oct. 1-Feb. 1	Oct. 1-Feb. 1			2
	3	Vermont	Sept. 15-Dec. 1		Sept. 15-Dec. 1	No open season	Sept. 1-Jan. 1	Sept. 1-Jan. 1	No open season	3
	4	Massachusetts	Aug. 1-Jan. 1		Aug. 1-Jan. 1	Aug. 1-Jan. 1	Sept. 15-Jan. 1	Sept. 15-Jan. 1	No open season	4
	5	Rhode Island	July 15-Dec. 16	July 15-Dec. 16	July 15-Dec. 16	July 15-Dec. 16	Aug. 15-Apr. 1‡			5
	6	Connecticut	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 12-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	6
	7	New York†	Sept. 16-Dec. 1	Sept. 16-Dec. 1	Sept. 16-Dec. 1	Sept. 16-Jan. 1	Sept. 16-Jan. 11	Sept. 16-Jan. 11	No open season	7
	8	Long Island	Aug. 1-Dec. 1	Aug. 1-Dec. 1	Aug. 1-Dec. 1	Sept. 16-Jan. 1	Oct. 1-Jan. 11	Oct. 1-Jan. 11	Oct. 1-Jan. 11	8
	9	New Jersey	May 1-Jan. 1	May 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Nov. 1-Mar. 16†	Nov. 1-Apr. 11†	Nov. 1-Mar. 16	9
	10	Pennsylvania	July 15-Dec. 1	Sept. 1-Jan. 1	Sept. 1-May 1	Sept. 1-Jan. 1	Sept. 1-Apr. 10	Sept. 1-Apr. 10	Sept. 1-Apr. 10	10
	11	Delaware				Sept. 1-Nov. 1	Oct. 1-Apr. 10	Oct. 1-Apr. 1	Oct. 1-Apr. 1	11
	12	Maryland†	Aug. 15-May 2		Aug. 15-May 2	Sept. 1-Nov. 2	Nov. 1-Apr. 11†	Nov. 1-Apr. 11	Nov. 1-Apr. 11	12
	13	Dist. Columbia	Sept. 1-Apr. 1	Sept. 1-Feb. 1	Sept. 1-Apr. 1	Sept. 1-Feb. 1	Sept. 1-Apr. 1	Sept. 1-Apr. 1	Sept. 1-Feb. 1	13
	14	Virginia	July 20-Jan. 1†	July 20-Jan. 1	July 20-Jan. 1‡	July 20-Jan. 1	Oct. 15-May 1†	Oct. 15-May 1†	Oct. 15-May 1†	14
	15	West Virginia	July 15-Dec. 20		Oct. 15-Mar. 1	July 15-Dec. 20	Sept. 1-Apr. 20	Sept. 1-Apr. 20		15
	16	Kentucky					Aug. 15-Apr. 1	Aug. 15-Apr. 1		16
	17	Ohio	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	17
	18	Michigan	Oct. 15-Jan. 1	Oct. 15-Jan. 1	Oct. 15-Jan. 1	Oct. 15-Jan. 1	Oct. 15-Jan. 1	Oct. 15-Jan. 1		18
	19	Indiana	Nov. 10-Oct. 1		Nov. 10-Oct. 1	Nov. 10-Oct. 1	Sept. 1-Apr. 15	Sept. 1-Apr. 15	Sept. 1-Apr. 15	19
	20	Illinois	Sept. 2-May 1	Sept. 2-May 1	Sept. 2-May 1	Sept. 2-Apr. 15	Sept. 2-Apr. 15	Sept. 2-Apr. 15	Sept. 2-Apr. 15	20
	21	Wisconsin	Sept. 10-Dec. 1		Sept. 10-Dec. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 10-May 1	No open season	21
	22	Minnesota	Sept. 7-Nov. 7		Sept. 7-Nov. 7		Sept. 7-Dec. 1	Sept. 7-Dec. 1	Sept. 7-Dec. 1	22
	23	Iowa	Sept. 1-Apr. 15	Sept. 1-Apr. 15		Sept. 1-Apr. 15	Sept. 1-Apr. 15	Sept. 1-Apr. 15		23
	24	Missouri	Sept. 1-Jan. 1	No open season	Sept. 15-May 1	No open season	Sept. 15-May 1	Sept. 15-May 1	No open season	24
	25	Kansas	Aug. 1-May 1		Sept. 1-May 1		Sept. 1-Apr. 15	Sept. 1-Apr. 15		25
	26	Nebraska	July 15-Sept. 1	No open season	Sept. 1-May 2		Sept. 1-Apr. 6	Sept. 1-Apr. 6	No open season	26
	27	South Dakota	Sept. 10-Oct. 10		Sept. 10-Oct. 10		Sept. 10-Apr. 10	Sept. 10-Apr. 10	Sept. 10-Apr. 10	27
	28	North Dakota	Sept. 7-Nov. 2		Sept. 7-Nov. 2		Sept. 7-Dec. 16	Sept. 7-May 10	No open season	28
	29	Montana					Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	29
	30	Wyoming	Sept. 1-May 1	Aug. 1-Oct. 1	Sept. 1-May 1		Sept. 1-May 1	Sept. 1-May 1	No open season	30
	31	Colorado	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	31
SOUTHERN	32	North Carolina			Local laws	Local laws	Local laws	Local laws	Local laws	32
	33	South Carolina					(a)			33
	34	Georgia*	Dec. 1-Mar. 1		Dec. 1-May 1	Sept. 1-Mar. 15‡	Dec. 1-Jan. 1‡			34
	35	Florida					Oct. 1-Apr. 1			35
	36	Alabama	Nov. 1-May 1	Sept. 1-Mar. 15	Nov. 1-May 1	Sept. 1-Mar. 15	Sept. 1-Mar. 15	Sept. 1-Mar. 15	Sept. 1-Mar. 15	36
	37	Mississippi	Sept. 1-Mar. 1			Sept. 1-Mar. 1	Sept. 1-Mar. 1	Sept. 1-Mar. 1	Sept. 1-Mar. 1	37
	38	Tennessee	Oct. 1-Apr. 15	Oct. 1-Apr. 15	Oct. 1-Apr. 15	Oct. 1-Apr. 15	Oct. 1-Apr. 15	Oct. 1-Apr. 15	Oct. 1-Apr. 15	38
	39	Arkansas								39
	40	Louisiana	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Sept. 15-Apr. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1		40
	41	Texas								41
	42	Oklahoma	Aug. 15-May 1	Aug. 15-May 1	Aug. 15-May 1		Aug. 15-May 1	Aug. 15-May 1	Aug. 15-May 1	42
	43	New Mexico	Sept. 1-Apr. 1	Sept. 1-Apr. 1	Sept. 1-Apr. 1		Sept. 1-Apr. 1			43
	44	Arizona			Oct. 15-Feb. 2	Oct. 15-Feb. 2	Sept. 1-Apr. 2	Sept. 1-Apr. 2		44
PACIFIC	45	California*	Nov. 15-May 1	Nov. 15-May 1	Nov. 15-May 1	Nov. 1-Dec. 1	Oct. 15-Mar. 1	(a)	No open season	45
	46	Nevada	Sept. 15-Mar. 16	Sept. 15-Mar. 16	Sept. 15-Mar. 16		Sept. 15-Mar. 16	Sept. 15-Mar. 16	Sept. 15-Mar. 16	46
	47	Utah†	Oct. 1-Jan. 1	Oct. 1-Jan. 1	Oct. 1-Jan. 1		Oct. 1-Jan. 1	Oct. 1-Jan. 1	Oct. 1-Jan. 1	47
	48	Idaho	Sept. 1-Feb. 1		Sept. 1-Feb. 1		Sept. 1-Feb. 1	Sept. 1-Feb. 1	Sept. 1, 1916	48
	49	Washington	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	Oct. 1-Feb. 1†	49
	50	Oregon	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 1-Mar. 1	Oct. 16-Feb. 15†	Oct. 1-Mar. 1†‡	Oct. 1-Mar. 1†	50
	51	Alaska	Sept. 1-Mar. 2	Sept. 1-Mar. 2	Sept. 1-Mar. 2		Sept. 1-Mar. 2	Sept. 1-Mar. 2	Sept. 1-Mar. 2	51
CANADA	52	Br. Columbia†	Sept. 1-Mar. 1		No open season		Sept. 15-Apr. 1	No open season	No open season	52
	53	Yukon*			Aug. 10-June 1		Aug. 10-June 1	Aug. 10-June 1	Aug. 10-June 1	53
	54	Alberta*	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Aug. 23-Jan. 1		Aug. 23-Jan. 1	54
	55	Saskatchewan*	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	Sept. 1-Jan. 1	55
	56	Unorganized Ter*					Sept. 1-Jan. 15	Sept. 1-Jan. 15	Sept. 1-Jan. 15	56
	57	Manitoba*	Aug. 1-Jan. 1		Aug. 1-Jan. 1		Sept. 1-Dec. 1			57
	58	Ontario*	Sept. 1-Dec. 16	Sept. 1-Dec. 16	Sept. 1-Dec. 16	Sept. 1-Dec. 16	Sept. 1-Dec. 16	Sept. 1-Dec. 16	Sept. 1-Dec. 16	58
	59	Quebec	Sept. 1-Feb. 1	Sept. 1-Feb. 1	Sept. 1-Feb. 1		Sept. 1-Mar. 1			59
	60	New Brunswick	Aug. 15-Jan. 1	Aug. 15-Jan. 1	Sept. 1-Dec. 2†	Aug. 15-Jan. 1	Sept. 1-Dec. 2†‡	Sept. 1-Dec. 2†		60
	61	Nova Scotia	Aug. 15-Mar. 1	Aug. 15-Mar. 1	Sept. 1-Mar. 1		Sept. 1-Mar. 1‡			61
	62	Pr. Edward Isl.*	Aug. 1-Jan. 1	Aug. 1-Jan. 1	Sept. 1-Jan. 1		Aug. 20-Jan. 1	Sept. 15-May 10		62
	63	Newfoundland*	Sept. 20-Dec. 15	Sept. 20-Dec. 15	Sept. 20-Dec. 15		Sept. 20-Dec. 15		Sept. 20-Dec. 15	63

OPEN SEASONS IN A FEW STATES ONLY.

BIG GAME.

Antelope.

Washington	Sept. 15-Nov. 1.
Alberta*	Oct. 1-Nov. 1.
Saskatchewan*	Oct. 1-Nov. 15.
Manitoba	Dec. 1-Dec. 15.

Caribou.

Washington	Sept. 1-Nov. 1.
Alaska	Aug. 20-Jan. 1.
Br. Columbia	Sept. 1-Jan. 1.
Yukon*	Sept. 1-Mar. 1.
Alberta*	Nov. 1-Dec. 15.
Saskatchewan*	Dec. 1-Dec. 15.
Unorganized Ter*	Dec. 1-Apr. 1.
Manitoba	Dec. 1-Dec. 15.
Ontario	Oct. 16-Nov. 16.
Quebec	Sept. 1-Feb. 1.
New Brunswick	Sept. 15-Dec. 1.
Newfoundland*	Oct. 21-Feb. 1.

Elk.

Montana	Oct. 1-Dec. 1.
Wyoming	Sept. 1-Dec. 1.
Idaho	Sept. 1-Dec. 1.
Yukon*	Sept. 1-Mar. 1.
Alberta	Nov. 1-Dec. 15.
Saskatchewan*	Dec. 1-Dec. 15.
Unorganized Ter*	Dec. 1-Apr. 1.
Manitoba	Dec. 1-Dec. 15.

Goat.

Montana	Oct. 1-Dec. 1.
Idaho	Sept. 1-Dec. 1.
Washington	Sept. 1-Nov. 1.
Alaska	Apr. 1-Feb. 2.
Br. Columbia	Sept. 1-Dec. 16.
Yukon*	Sept. 1-Mar. 1.
Alberta*	Sept. 1-Oct. 15.
Unorganized Ter*	Dec. 1-Apr. 1.

Sheep.

Montana	Oct. 1-Dec. 1.
Wyoming	Sept. 1-Dec. 1.
Idaho	Sept. 1-Dec. 1.
Washington	Sept. 1-Nov. 1.
Alaska	Aug. 20-Jan. 1.
Br. Columbia	Sept. 1-Nov. 15.
Yukon*	Sept. 1-Mar. 1.
Alberta*	Sept. 1-Oct. 15.
Unorganized Ter*	Dec. 1-Apr. 1.

Black Bear.

Louisiana	Nov. 1-Feb. 1.
Pennsylvania	Oct. 1-Jan. 1.
Michigan	Nov. 1-Apr. 1.
Mississippi	Nov. 15-Mar. 1.
Alaska*	Aug. 1-Apr. 1.
Br. Columbia	Sept. 1-July 15.
Quebec	Aug. 20-July 1.

GAME BIRDS.

Ptarmigan.

Alaska	Sept. 1-Mar. 2.
Br. Columbia	Sept. 15-Apr. 1.
Yukon*	Sept. 1-Mar. 15.
Alberta*	Oct. 1-Nov. 1.
Saskatchewan*	Oct. 1-Nov. 1.
Quebec	Nov. 1-Feb. 1.†
Nova Scotia	Sept. 1-Mar. 1.
Newfoundland*	Sept. 20-Dec. 15.

Sage Hen.

Nebraska	Sept. 1-Dec. 1.
Montana	Oct. 1-Nov. 1.
Wyoming	Aug. 1-Oct. 1.†
Colorado	Aug. 1-Sept. 1.
California	Sept. 1-Dec. 1.
Nevada	July 15-Oct. 2.
Idaho	July 15-Dec. 1.
Washington	Oct. 1-Jan. 1.
Oregon	Aug. 1-Nov. 1.

Reedbird.

New Jersey	Sept. 1-Jan. 1.
Pennsylvania	Sept. 1-Jan. 1.
Delaware	Sept. 1-Nov. 1.
Maryland	Sept. 1-Nov. 1.
Dist. Columbia	Sept. 1-Feb. 1.
West Virginia	July 15-Dec. 20.

Crane.

Nebraska	Sept. 1-Apr. 6.
North Dakota	Sept. 7-Dec. 16.
Colorado	Oct. 1-Mar. 1.
Oklahoma	Aug. 15-May 1.
Nevada	Sept. 15-Mar. 16.
Alberta*	Sept. 1-Jan. 1.
Saskatchewan*	Aug. 1-Jan. 1.
Yukon*	Aug. 10-June 1.

DAYS EXCEPTED.

All hunting prohibited on:

Sundays.—In all States and Provinces east of the 105th meridian, except Illinois, Louisiana, Michigan, Texas, Wisconsin, and Quebec.

Mondays.—For waterfowl in Ohio, and locally in Maryland and North Carolina.

Tuesdays.—For waterfowl on the Susquehanna Flats and certain rivers in Maryland.

Other days.—For waterfowl locally in Delaware, Maryland, Virginia, and North Carolina.

Election day.—In Allegany, Baltimore, Cecil, Frederick, and Harford counties, Md.

Days when snow is on the ground.—In New Jersey, Delaware, Virginia, and Maryland.

OPEN SEASONS FOR GAME IN THE UNITED STATES AND CANADA, 1912.

Carrying the Rod.—Dr. E. F. Conyngham of Bonner, Mont., doesn't like my idea of carrying the rod tip first. The Doctor says he favors carrying it butt first with the tip trailing behind. The subject is one of importance from a practical standpoint and the views of experienced anglers always makes interesting reading. Here is my idea: Keep the rod in front of you, pointing the tip through the bushes you penetrate. Joint your rod only when you reach the place for angling, and take it apart again when you are ready to leave the water for camp, unless the camp is on the edge of the lake or stream where you fish. When fishing along thickly-wooded banks, point the rod in front of you, tip first; never pull it after you. Fasten the hook on one of the reel bars, and then thrust the rod's tip through the branches or shrubbery ahead of you when you move along, casting here and there. This is not necessary when one only moves a step or two, for then, if there be open space, the rod and line may be held clear of the underbrush and branches. In all instances keep the rod ahead of you. These are the instructions given me by my fathers of the angle—Seth Green, John Harrington Keene, Fred Mather, William C. Harris, et al.—when I was being taught first lessons in fly fishing. Seth Green, John Keene and Harris personally advised me to carry the fly rod tip in front of me, and each of the trio personally showed me the method on the trout streams. Harris and Keene always carried their fly rods tip first, and I have seen both these experts along the streams many times during many years of personal fishing with both of these anglers. However, since, as T. E. Pritt says, one of the charms of angling is that it presents an endless field for argument, speculation and experiment, Dr. Conyngham must not be denied his view on the subject, and, therefore, I am most pleased to include them here: "I have fished with a fly for trout and salmon nearly forty years in Europe and this continent, and never yet saw an expert angler carry a rod in the way described by Mr. Bradford. That is just the proper caper to break tops. The rod in going through brush should be carried butt forward; then the tip will trail as easily as the tail on a dog, and furthermore, you can walk at good speed without interference. In my many years of fly fishing I have had one broken tip; a fool woman knocked it down and stepped on it. Luckily it was lancewood, so I could repair it. What would have been my predicament had the rod been of split bamboo?" Just as there are crack wing shots who shoot with one eye closed and other experts who give trigger with both eyes open, so in angling, there are many practiced hands who disagree on the various ways and means in fishing. I favor keeping my tip in front of me, and while I shall never change this method, I refrain from condemning Dr. Conyngham's contrastic way of carrying his tip. Let's hear from other brothers of the angle on the subject.

* * *

Bluefish.—(P. saltatrix). This voracious tiger of the sea is widely distributed, ranging on our coast from Central Brazil and the Guianas through the Gulf of Mexico and north to Novia Scotia, though absent from the Bay of Fundy. It is abundant from Cape Florida to Penobscot Bay. In the Gulf of Mexico and on the coast of New England and in the middle states it is called bluefish, Rhode Island bluefish and horse mackerel; south of Cape Hatteras, skipjack; North Carolina, Virginia and Maryland, greenfish. Young bluefish in New York are called snapper and skip mackerel; in New Jersey and Connecticut, snapper; parts of New England, snapper and snapping mackerel; about New Bedford, blue snapper and up the Hudson, whitefish. The bluefish is taken near the surface by still fishing with animal bait or by trolling with inanimate bait—a lead, cedar, bone or pearl imitation of squid—in the ocean, its surf and bays, on any tide from early summer to November, or by still fishing at high tide in calmer waters, creeks, channels, rivers, with a 5/0 sproat hook, wire-snelled and baited with shedder crab, spearing, menhaden, etc. In

the surf and ocean proper use a heavy casting rod, a multiplying reel and a stout linen line. In still fishing use the same outfit, and with lots of line out, let the bait drift with the tide current, and in surf fishing, where long casts are made from the beach, let the bait roll outside the breakers. The bluefish of the bays weigh from 1 to 4 pounds; those of the surf and open water, 2 to 15 pounds. The young bluefish ("snapper") travels in schools on the surface of the ocean near breakwaters and inlets, and in bays near the mouths of creeks and in the channels, where it feeds upon small fish, chasing its prey much the same as its parents pursue larger game in deeper waters. In our northern waters it is abundant in August, September, October and early November, when it is taken without the use of a sinker on light tackle—the same as used for the small herring, bergall, and spot or Lafayette—with small killyfish or bits of clam, crab and other fish bait. I have also taken it upon a bright red artificial fly, the fins of the scuppang and fresh-water perch, a bit of tin foil and a patch of red flannel, and the sport afforded was quite equal to pond fishing for trout and nearly equal to open brook-water trout fishing.

* * *

Bluefish at Bay Shore.—The men who guide parties of bluefish fishermen to the trolling and chumming grounds in the Great South Bay, Long Island, New York, tell me the new law prohibiting net fishing in this famous water is a good law, but that it would never have been passed but for the net fisherman's brutal disobeying of the rules of his legitimate calling. Had the net fisherman lived up to his honest agreement—taken his fishes according to the legal rules of net fishing—there would have been no complaint. Instead, the net fisherman, notwithstanding repeated warnings, chose to ignore the reasonable complaints, continued his illegal fishing and is now without any sort of lawful way of net fishing. Had he discontinued one or two small, unlawful tricks there would have been no general complaint, but, like the New York state trap shooter, who, when complained to about the cruelty of not dispatching wounded birds, he ignored the warning and as a just punishment the pursuit itself was prohibited. The baymen say net fishing as allowed by law was all right. The nets caught and held only decent-sized bluefish, weakfish, etc., but when the netters used nets with the mesh smaller than the law allowed and thereby killed millions of 5-inch bluefish and weakfish, the hook-and-line fisherman objected to this wasteful method. At first, the net fishermen were appealed to. They ignored the appeal. Then the whole body of anglers and guides went to the courts and stopped the whole business of netting in their part of the Great South Bay. Several captains of the fine fleet of chumming boats at Bay Shore explained to me the method employed by the netter to make their net meshes smaller than the law allowed. "They buy the legal-size mesh," said my bayman friend; "and with the net comes the bill noting the legal size. The net and the bill are examined by the fish warden, and this officer finding the mesh of legal size, issues a permit. So far so good, but," continued the bayman with a wink of the eye and his tongue bulging out his cheek, "before the net is used the mesh is soaked in alum and coated with tar, and this treatment shrinks the mesh, and instead of the baby bluefish and weakfish being able to escape, they are held with the mess of legal-size fishes. The netter, if spoken to about the alum and tar treatment will say it is performed as a means of preserving the net. The marketmen are equally guilty with the netters, for they know the baby bluefish, weakfish, etc., are of unlawful size." The mess of small fishes—in most instances one-third bluefish, one-third weakfish and one-third striped bass—are sold as pan fish along with Lafayette, pogy, tomcod, etc. "And our Savior chose fishermen as his disciples." Surely the calling and the men as a class are honest—it is the individual who goes astray.

* * *

Yellow Bass.—Arkansas anglers enjoy taking the yellow bass (barfish, etc.) in the St. Francis River. The species affords excellent sport early in the season on the artificial fly in shallow water. During the summer and autumn it favors minnows. The yellow bass resembles the striped bass (salt water), and is graded with the white bass. It averages in weight from 1 pound to 3 pounds. The light-weight black bass rod or the medium-weight brook trout rod are appropriate tools. Anyway, use a fine leader and play the game.

* * *

Yellow Tail.—(B. churysura). This fish of 10 and 11 inches, is known as silver perch on the coast of New Jersey. It is abundant singly and in pairs about Beaufort, N. C., and Charleston, S. C., and common along the shores of Louisiana and Texas and the west coast of Florida. At Pensacola it is called mademoiselle. It is present in the southern waters throughout the year, is most plentiful from May to November and is found with the spot and squeteague on the grassy shoals of the bays, where it is taken on light tackle with shrimp bait.

* * *

The Chivalric Angler.—If a man could go fishing for good pay he'd hate it.—New York Press.

* * *

Connecticut.—Crystal Lake, Stafford Springs: Black bass, yellow perch, etc.

Squid.—There is a demand for squid as food. Fisherfolk regard this important bait mollusk and the octopus (devilfish) as true fishes, more closely related to the clam, oyster, scallop, than to other fishes. Cut into small cubes, fried in olive oil and served with lemon juice squid are as delicious as fried scallop.

* * *

Season, Tide and Weather.—The hour of the day has little to do with successful fishing in salt water. The most important consideration is the season, each month yielding its particular form—cod, ling, hake, whiting, etc., in cold weather, flounder in early spring, weakfish in June and September, striped bass, sea bass, blackfish, Lafayette and tomcod in the spring and fall, bluefish, plaice (fluke) and porgie in July and August, etc. Next in point of importance comes the tides—some species taking the bait better during low tide, and other species favoring high tide, flood tide, ebb tide, etc. Then the weather is next in important order. As for the right time, personally I have had little success in the dark beyond weakfish and eel, the latter being taken abundantly night and day, regardless of season, weather, hour and tide, and the weakfish on bright moonlight nights on a quiet flood tide with a single shrimp bait, a small New York trout hook and the lightest leader worked on a tiny 4-ounce fly rod, the fine 3-pound fish taking the bait and affording the best of play all around the boat, close in. As for weather, that's a puzzle to me in salt water. I have had the best of angling in all sorts—high winds from all quarters, still days, hot days, cold days, light days and dark days. One of the best times I ever had with the weakfish (squeteague) was in a fierce downpour of rain during a gale, accompanied by thunder and lightning. Then, of course, I've had fine play on quiet, balmy days. Nonetheless, the weakfish is a recognized uncertain species; he comes and goes at the oddest moments in his season, and though often plentiful all about, will at times never touch the bait. Then again, as I have said, he's obliging night and day in fair and foul weather.

* * *

Bath Beach, L. I., N. Y.—Weakfish are plentiful here in June and September. They are not abundant in July and August. The fish average 2½ pounds, and are caught with shrimp and shedder crab baits. Bath Beach is reached in an hour's ride from New York City.

* * *

Princess Bay, S. I., N. Y.—This is a fine objective point for weakfish, fluke (plaice), sea bass, porgie, bluefish, striped bass, etc. Old Orchard Shoals and the Monument are favorite angling spots. Princess Bay is about an hour's ride by rail from New York City.

CHARLES BRADFORD.

Observations Concerning Fish Producing Streams

Editor Outdoor Life:—Within the last week I have been asked the question, "What has been the main reasons of certain streams being almost depleted of fish, that under natural conditions alone, without artificial restocking, had always been reasonably abundant?" To this question I can only make this reply: We all know that civilization and the settlement of the country has always destroyed the productiveness of waters that have been the haunts of fish, by interfering with the natural laws of propagation and the destroying of the natural food, to a more or less extent. These waters are being utilized in vast irrigation and power projects and lack of suitable laws for the proper screening of ditches, canals, etc. It has now come to the point where, if we do not want to write the last chapter of fishing, we have got to propagate and protect them.

It stands to reason that year after year less available spawning ground is left. Add to this the destruction and deforestation of the hills and mountains at the headwaters, that have changed our rivers and streams with relatively even flow to broad and shallow currents wandering over vast gravel beds. The mud and sediment adds destruction to all salmonidae eggs in their tender age, or until the young embryo is visible, by suffocation, while countless thousands of eggs and fry are swept into the various channels, sloughs, irrigation ditches and canals, there to await the receding of the waters, when destruction is complete.

When this country was first discovered all of our streams and lakes were stocked to the limit with fish, but they were discovered by man and unmercifully slaughtered for food and gain. During the early history of open seining experience has shown that people in general, when they have a chance to make money by exploiting a great natural resource, have not the slightest hesitation in destroying utterly and for all time to come.

In Alaska it has been the practice of the various canning companies when they had wiped out all the salmon in one stream or river simply to move the scene of their operations to another river. If this had been allowed to go on the salmon fishery of Alaska, which yields $10,000,000 worth of products per annum, would have ceased to exist within half a generation.

But a more common and usually more serious disturbance of the natural fish life

equilibrium is due to the importation of worthless, or not suitable, fish into our public waters. The mistakes in the distribution of species of fish that bring widespread destruction are man's mistakes and blunders, not Nature's. As an example: No river in a state of Nature was made to produce trout and black bass at one and the same time, as the basses are perhaps the most voracious fish known. The haunts and delights of the bass in lakes are also the natural feeding grounds of the young trout, and in their search for food they are both brought to the same feeding ground; and when the young trout leave these feeding grounds it is inside of the bass.

I cite this merely to show that throughout various states we have made many mistakes and blunders in the restocking of streams and lakes, and it is up to us to use great caution in the selection of suitable species of fish for distribution in public waters. Some years ago the carp were introduced in the public waters of the United States from Germany, and at that time were considered to be a most valuable food and commercial fish, being very prolific and becoming very abundant throughout the Middle West. But today in most states they are considered a pest, having destroyed the natural food which their more fortunate brothers subsisted on to a very large extent. But the importation of carp has had one redeeming feature, fulfilling the old adage that "it is an ill wind that blows good to no one," for today it ranks as one of the best foods, when prepared, for the private trout-raising industry. For under natural conditions in the entire fish world there is a permanent surplus of life, so superabundant that Nature takes as elaborate precautions to insure its destruction as to secure its reproduction. By this series of natural checks upon the endless numbers and variety of forms of life, Nature holds her own balance. But man for want of knowledge disturbs and destroys this natural balance, or equilibrium, to his own undoing. As we view the wonderful illustration of Nature's laws we know that she never gave to any form of life the power to destroy without placing a limit to its power of destruction, so that for every form of fish life there are one or more forms to prey upon it and prevent it from becoming redundant.

Certain species of trout or salmon have no well-defined movements and are inclined to migratory habits, and the question of good or bad fishing is regulated by a series of cycle years, for under natural laws and conditions we have once in seven years as regular as the years come round, from some cause that I have never heard any satisfactory explanation made, off years of good or bad fishing, even in streams that have been heavily restocked by artificial means.

Examples of these cycle years of a dry or wet season or of a bug pest are noticeable on land and in our watery element on the decreasing run of various species of andromous fish of the Pacific or Atlantic coasts, for once in seven years we have an enormous run of a certain species of salmon, shad, etc., which decreases until another cycle year is on. So that one man's prophecy is entitled to as much credence as another's as to whether we will have good or bad fishing in certain years. It will, therefore, be seen that in Nature's way the number of fish in any lake, stream or ocean regulated itself before man entered upon the scene. A. J. SPRAGUE.

Utah.

Another Theory on the "Blunt-Nose Trout"

Editor Outdoor Life:—Since writing you last in regard to the "blunt-nose trout," Charles Miles, a local angler, caught one of these fish. It was taken from Rock Creek (Rocky Ford of the Yellowstone), a short distance below this city (Red Lodge, Mont.) and was of the same size as those mentioned in the May issue.

As these fish have not been taken until the last two or three years, I am inclined to believe them to be hatchery fish. If any of you brother anglers have had experience in a hatchery, speak up and tell us if you have ever noticed these freaks with the hatchery fish. O. J. SALO.

Montana.

Landing a 13-Pound Trout

J. W. Scott of Armstead, Mont., about a couple of months ago landed what has been called the "record black spot trout of Montana," and this is what he writes about it:

"It's a sin to send a lot of fellows out here on the strength of that big fish. I have fished industriously for fifty years. I have caught enough black bass and pickerel to fill a car. I have caught yellow tail in Avalon Bay until I fished myself wrong side out and in all my experience I have never before caught a 13-pound fish with a rod and reel. In September, 1903, I had two cans of Henry Lake trout fry from the Bozeman government car, which were planted in what we call the 'Spring run,' which is five miles long. At that time it had no fish except the blobs, commonly

called bullheads. Most of the small fish stayed in the 'run' the first year, and many of them the second. Most of them eventually passed into the deeper waters of Horse Prairie Creek, but always came back to the run to spawn. The fish in question was no doubt one of that tribe and was caught just where the run enters the Prairie.

"My rod was a 5-ounce split bamboo and cost $7. Has been used five years and has caught tons of fish, large and small. The line is a kingfisher mist, size 'F.' The hook is a No. 2 bass fly royal coachman. The leader is four feet, home made.

"The fish was in a pool about six feet deep, made a pass at the bare fly, but stopped before striking. I then put on a small blob and came at him from another direction. He made the grand swoop and the fight was on. Really, I was ashamed of him. For one of his size he was no sport. After one rush he went to the deepest part of the pool and sulked for, it seemed to me, an age. Then, with one whirl, he made a run over the riffle for the river. In the shallow water he was practically helpless and soon worked himself out on the beach. Weighed by our grocer, he tipped the beam at 13 pounds 9 ounces."

Non-Resident License for Fishing on Reservations or Private Property

Editor Outdoor Life:—If I fish on an Indian reservation outside of my home state, as a guest of an Indian resident of the reservation, with permission from the agent on this reservation, can the state in which this reservation is located compel me to pay a non-resident fishing license?

California. B. CARLTON.

The Colorado game and fish commissioner tells us that if you were fishing under such an invitation as the above in the state of Colorado that he would have to compel you to pay a non-resident license. If you were so invited by a land owner on a fishing stream which flowed through his land (even although you never fished off his property) you would be expected to pay a non-resident license. The two propositions are practically alike.—Editor.

Eastern Brook Trout in Western Waters

Editor Outdoor Life:—I have just read Mr. O. K. Pressentin's article on page 169, August issue of Outdoor Life, under the caption "Brook Trout in the Far West." I have also read the following article, "Little Salmon of the Streams," which is a comment on Pressentin's article, and is very sensible throughout.

Mr. Pressentin brought up the subject of "brook trout" (which by inference means the Eastern trout "Salvelinus fontinalis") some years ago, when I was editor of the Pacific Sportsman. At that time Mr. Pressentin made the assertion that the Eastern brook trout (Salvelinus fontinalis) was a native to the Pacific coast and I contended that he was mistaken. I have no reason to change that point of view, although I saw the fish that Mr. Pressentin sent to you and am ready to acknowledge that it resembles the Eastern species of the fontinalis to a very marked degree.

Before the fish reached you in Denver, I got in touch with Mr. Pressentin here in Seattle and had quite a long talk with him. He told me at this time that he had caught this same fish for twenty years or more in the state of Washington in the upper tributaries of the Skagit River and in the Mount Baker neighborhood and also in the Olympics. He told me that Pressentin Creek was one of his favorite boyhood fishing streams and this fish existed in this particular creek. Pressentin Creek empties into the Skagit from the south almost across the river from the station of Birdsview on the Great Northern branch line running up the Skagit River. Mr. Pressentin's father owns the ranch at the mouth of Pressentin Creek; the creek takes its name from the family.

Mr. O. K. Pressentin was raised on this ranch and is a man I think about 30 years old. I made it my business to make the trip to this particular creek immediately after I saw Mr. Pressentin, and I stopped with his father at the ranch house. The next morning I hiked up the trail to the headwaters of Pressentin Creek and fished down to the mouth of it from the head. I used a fly, worms, salmon eggs and everything else I could think of, trying to get one of these fish which Mr. Pressentin said were native in this creek. I got a good many small rainbow trout and cut-throat trout, but I did not strike one of these red-spotted trout which Mr. Pressentin calls "brook trout," and I have caught a great many of the Eastern brook trout in the East and know their habits thoroughly. I am free to say that this fish does not exist, at least at the present time, in Pressentin Creek, and I could not get Mr. Pressentin's father or mother to say that they had ever seen this red-spotted trout at any time during their thirty years or more of residence at the mouth of the creek. That, however, does not prove that Mr. Pressentin never caught the red-spotted trout in that particular creek, but it does prove that I could

not find it, and I think all the fishermen in the United States will concede that I could find it if it was there, and everybody knows that I am not a swivel-chair fisherman, but have personally fished nearly every place where water runs down hill in the United States.

I went to the end of the railroad on this trip and looked up every fisherman I could find and questioned him about this red-spotted trout which Mr. Pressentin calls "brook trout," and not one man could I find who had ever seen the fish or anything else of a trout nature carrying red spots, except the common Dolly Varden which, as everyone knows, is a charr and has large spots ranging from pale yellow to pink. I made a pretty thorough search for this red-spotted brook trout in the country where Mr. Pressentin claims to have got it for twenty years, and not one man could I find who had ever seen the fish or ever heard of it, and there are just as good fishermen among the upper Skagit streams as there are in the world, and they know every stream and what it contains.

I deduce from this investigation that Mr. Pressentin's fish is indeed a rara avis, and my private opinion is that it is in all probability a stray Eastern brook trout that has gone upstream from some planting done by the Fish Commission. Mind, I do not say that Mr. Pressentin is absolutely wrong, because I have not yet proved that, but everything points in that direction. Eastern brook trout have been planted in Pacific waters for a great many years, but, as far as I know, plantings have never been successful enough so that the fish is noticeable in any stream, although some heavy stockings in the last few years seem to have resulted in peopling one or two small streams with these fish at least temporarily. How permanent this stocking will be remains yet to be seen.

I do not believe that the Salvelinus fontinalis, or any sub-species of it, or any Western species of it, exists as a native fish west of the Rocky Mountains, south of the British line. North of that line I know nothing about it. The fish may occasionally be caught here and there almost anywhere as a straggling specimen in the mountain streams of Washington or Idaho or Oregon because of very numerous plantings that have been done both by the United States government and by the different state fish commissions. None of these plantings, however, have been a marked success up to date. I think that Mr. Pressentin has occasionally caught strays from these plantings. I think he is honest in his belief that he has found the fontinalis native on the Pacific coast, but I am convinced that he is in error in this belief and that the fish does not exist on the Pacific coast as a native, and never has. I hope for the sake of all fishermen that Mr. Pressentin is right, that he has actually found the fontinalis, or at least a Western species of it, on the Pacific slope, but I do not believe that he has.

I saw the fish that was sent to you and will say that without a scientific examination I would call it a fontinalis, but only a scientific examination can prove that one way or the other, and I hope that Dr. Everman of the United States Bureau of Fisheries at Washington personally examines this specimen and tells us exactly what it is.

I note that Mr. Pressentin in his article in Outdoor Life of August calls the fish a "speckled trout," and I agree with the writer of "Little Salmon of the Streams," which follows Mr. Pressentin's article, that "speckled trout" does not mean anything definite, because it is a common name applied to all trout all over the country by people who know nothing about the scientific classification of fishes. Along the Gulf coast of Louisiana, Mississippi, Alabama and Florida the natives speak of "speckled trout" in the salt water. I investigated this fish, caught it and found it to be the common "weakfish," which is a spotted trout-like form, but is no more a trout than a whale is a trout. All over the South the natives speak of "trout" in the streams, and when you catch them they turn out to be big-mouth black bass.

Here on the Pacific coast you hear fishermen speak of "brook trout," "rainbow trout," "cut-throat trout," "bull trout," "Dolly Varden trout," "steel-head trout," "salmon trout," and a good many other special kinds of trout. These names are due to ignorance and are given to designate some fish which appears to be different because of local conditions changing coloration. The fact is, the rainbow and cut-throat trout are the native species of the coast, and it is a question whether they are not one and the same fish. The so-called Dolly Varden trout is not a trout at all but is a charr that belongs to the same general family to which the fontinalis belongs, but he is not a trout any more than the bass is a trout.

Young salmon are very trout-like in appearance and are frequently caught for trout in the streams, the fisherman not knowing the difference. The "bull trout" is a local name for the Dolly Varden. "Lake trout," "salmon trout," "brook trout," "speckled trout," "black speckled trout" and a dozen other names are local names for the rainbow and cut-throat species, and as far as I know or have ever been able to positively find out, there is no red-spotted trout native to the Pacific coast if we exclude the so-called Dolly Varden, on which the spots run from lemon yellow to pink. I think now and then, however, that the transplanted fontinalis is occasionally caught in widely scattered streams of the Pacific coast and probably has been, off and

on, for twenty years, although the fish does not seem to take hold and multiply to any noticeable extent, even in the face of numerous plantings for years past.

I think Mr. Pressentin's fish and those that he has caught here and there before are nothing more or less than fish from these plantings of Eastern fontinalis that have strayed up the streams, and while I think Mr. Pressentin is honest in his belief, I think he is simply mistaken and will continue to think so until far more definite evidence is presented.

In the meantime I hope Dr. Everman gives us a positive identification of the fish sent you by Mr. Pressentin. Dr. Everman's report may prove Mr. Pressentin to be right and me in the wrong; if so, I am ready to gracefully acknowledge the corn, but at the present time I have simply to say "show me." EL COMANCHO.

Washington.

Where Do Our Game Fish Go?

Editor Outdoor Life:—Yes, where do they go? This question is answered alike by only two persons out of ten. Some are caught and eaten by mink and snakes, large numbers are lured into the irrigation ditches, few are taken by the sportsman, but the greatest number are taken by the fish "hog."

It is only a common thing where the "hogs" are a-plenty to see 5 and 6-inch trout in the garbage barrel and the ash can.

It is not wrong for a person to go fishing and get a large number of fish of an eatable size and give those that he can't use to a less fortunate one, but for a "hog" to go out and take every fish that is large enough to take a fly and on arriving at home to throw the smallest ones into the ash can, it's a shame!

Last summer while out fishing I met two of these "hogs" and greeted them with, "What luck?" "Forty," was the answer, and on looking into their half-filled basket I saw forty of what I would call minnows, not one of them being over 7 inches long.

The very stream where these fish were taken is stocked by the government, but they have a poor show of increasing on account of these "hogs." Something surely ought to be done. Let we anglers get together and let our senators know of this and have him prepare a bill in regard to it.

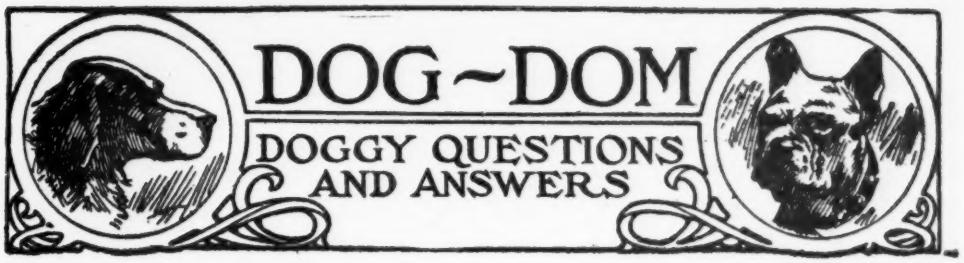
Every state ought to have a law which would put a stop to this taking of any fish under 6 or 7 inches; also compelling farmers under penalty to place some kind of barrier at the heads of their ditches.

The paddle wheel mentioned by James A. Henshall in the June issue is a good idea as a screen catches all floating sticks, etc., and soon blocks up the ditch. O. L. SALO.

Montana.

WM. S. Holmes.

"HE SAID THERE WASN'T NO FISH IN HERE."



Conducted by ED F. HABERLEIN, Author of The Amateur Trainer.
TRAINING, HANDLING, CORRECTING FAULTS AND CARE OF THE BIRD DOG.

F. G., Salt Lake, Utah.—My setter bitch has a litter of as nice puppies as anyone ever saw. Some old dog men who have seen them say that the dam certainly must be well bred, but I have no pedigree of her. I bred to a pedigreed dog and would now like to have the bitch registered so that the puppies will also be eligible for registry. How must this be done?

Answer.—It will be necessary to get authentic pedigree of her dam and sire or their progenitors if those had been registered. Should that be impossible nothing can be done.

R. P. L., Essex, Iowa.—My Irish water spaniel, 4 months old, seems perfectly healthy but stays thin and poor, eats irregularly and sometimes throws up his food. I got him from a kennel lately and was in that condition when arrived; was also covered with fleas, but have him free of the pests now. I want him to grow and be as large as possible for the breed and want to know what to feed and do for him to get in trim. At what age should I begin yard training. I have your book, "Amateur Trainer" and like the method.

Answer.—Doubtless internal parasites are cause of remaining poor. To enhance growth feed mostly on lean raw beef, together with table scrap four times a day for next two months, then three times; later on but twice a day with the heaviest feed at night. As to training, start yard training about two months before the time you expect to work him on game next fall. In the meantime do nothing but enhance growth and activity.

F. D. E., Michigan, N. Dak.—What, in your opinion, is best when dog comes to point on chickens, gradually force dog up until bird is flushed or leave him stand holding point and pass him in working up the chickens? Some maintain that you should never pass your dog, while others hold that coaxing dog up or forcing him with gentle boosts causes him to lose his stanchness on point.

Answer.—For a dog to remain stanch he must not be allowed to flush the birds, but stand while shooter puts up bird and takes a shot and is then ordered to fetch. After a dog is under perfect control and reliable he may be made to put up birds under certain circumstances—at quail shooting in thickets where sometimes it becomes very difficult for the shooter to get near birds. As a rule, however, dog should stand his ground after coming to point. If gradually forced to flush he will soon get into the habit of doing so on own accord regularly, whether the shooter be present or not, ultimately becoming a regular chaser as well.

B. H. A., Arlington, Mass.—Twelve years ago I trained my own dog perfectly by use of force collar as directed in "Amateur Trainer" and have had numerous fancy offers for the old dog from hunters who all own "professionally" broken dogs. I still own her, but realize that the dog 13 years old will soon be beyond use for a long hunt, and am planning to have two of her youngsters take her place when necessary. The pups are 11 months old and have now progressed nicely in yard training. One of them gives me trouble by barking while chained to kennel. He goes in at first command, even by mere pointing to it with finger, but as soon as I disappear he comes out and starts barking. I wish to break up the annoying habit and should be glad for any suggestions.

Answer.—Explicit directions as to quieting at kennel are given on page 58 in "Amateur Trainer." However, should this prove irksome, then proceed thus: Arrange tank or can of water over place where dog usually stands when yelping and tugging on chain. Vessel is made to tilt or have an opening at bottom. Soon as he starts barking you pull the string leading to house, which releases the water. He gets an unexpected shower bath and will hastily retreat to within. A few repetitions will teach him that so soon as he comes out and barks he finds it uncomfortably wet, hence fears making a racket. This may seem foolish, but it works very satisfactorily.

D. W. A., Tuscumbia, Ala.—I have a setter puppy, about 7 months old, when turned out of her kennel yard immediately begins to

chase the chickens all over the yard and can't be stopped by calling to her. I want to know if there is any way by which I can stop this habit now while she is young. I will appreciate any suggestions you can give to stop it.

Answer.—A pup of that age who will pay no attention to chickens would not be a bird dog worth its keep. The more this propensity predominates the greater the prospect of making a first-class worker on game afield. A sound switching, applied by another person, when caught in the act of chasing or worrying chickens, should be sufficient to make desist. Not having been brought under control at this age, she naturally heeds no call and just persists in the instinctive sport. If not yielding to light punishment (by other person) the force collar should be used in giving such snubbings as to make her believe that "lightning" strikes her if attempting to indulge in the frolic.

N. G., Houston, Texas.—My old dog is off his feet, refuses to eat most of the time, has mattery eyes and breathes hard during this hot weather. There seems nothing in particular the matter with him and is only dull and somewhat restless. I feed corn bread twice a day; also some milk, but he partakes of it very sparingly, sometimes nothing at all in two or three days. I wish to use this dog in the field soon now and would like your suggestions in the matter.

Answer.—Evidently the food is of too heating a nature during hot weather and without much change in diet digestive organs become deranged. Lack of regular exercise, also, may have something to do with it. Milk, in any form from sweet to clabber, is to be recommended during hot weather, together with table scraps and some lean raw beef two or three times a week. Possibly the dog suffers from tapeworm. This is indicated by refusal of food for extended periods. The description given is insufficient to diagnose the case more clearly. A good long run every evening and change of diet may be all that he needs.

F. P., Phoenix, Ariz.—Please advise me what kind of dogs would make the best pack for hunting mountain lion, bear, lynx, coyote, etc. Would you advise hounds, and if so, what kind? Are the Airedales as good as hounds?

Answer by J. A. McGuire.—While we have never bred bear-hunting or lion-hunting dogs, nor grayhounds, either, yet we think we can tell you pretty well the kind of dogs that are used for bear, lion and lynx-hunting. We have hunted a great deal behind these kind of dogs, and it has been our experience that they are mostly of foxhound and bloodhound breeds and crosses of these breeds. We certainly would advise the use of hounds such as fox or bloodhounds, whether or not you use Airedales. The Airedales are not as good as the regular hounds for trailing, but they make splendid fighters and are pretty good on the trail, too. If we were to pick on an ideal pack, we would use about six mixed fox and bloodhounds and about three or four Airedales. Of course, the only kind of dogs for hunting coyotes is the grayhound or Russian wolfhound (the Barzois).

T. W., Kansas City, Mo.—A few days ago I took my 8-months-old pointer pup along to the gun club shoot. Pup was just behind me when I stepped up to score and fired. At report of gun he yelled and ran away. Reaching home I found Mr. Runaway under the couch and would not come out when urged. He seems very much afraid of me ever since, although I have treated him very kindly and in every way endeavored to overcome this. Can you suggest a way to do this, and greatly oblige?

Answer.—Taking the pup to club shoot was well enough, but he should have been brought up to firing line very gradually to show him that there is no harm in the noise of gun report. Getting used to gun in this manner will save a lot of time later on in course of training. Bringing up at once and firing gun resulted in making the pup gun-shy, which will require much time to overcome later on. This, however, can be done successfully by merely following instructions as given on pages 103-112 in "Amateur Trainer." (Outdoor Life can furnish the book promptly). The modus operandi cannot be fully given in this department.

T. P. L., Spokane, Wash.—A gentleman traveling through here presented to me what he called a Laverack English setter dog, as he could not well take him farther. Dog was recommended to me as well trained and I find him very intelligent and obedient as any dog could be. I own a fine English setter bitch, soon to come in season, and would like to know if this dog would be a good one to breed to so as to make the puppies eligible for registration. Of what color should a Lavarack be? The man giving me this dog had no papers with him, but assured me he was registered in stud book. Is there any way of obtaining registration papers, and how?

Answer.—The usual color and markings of the Laverack setter is white and black with mottled spots in white, called "ticked;" also white and orange, or lemon, and similarly ticked; black and tan; blue, lemon, or orange belton—an admixture of the colors with the white producing a blue or roan effect, called "belton." The term "English setter" includes the Laverack setter, as well as Llewellin setter. Without having registry number of dog and name of stud book, it will be impossible to get duplicate registry papers.

Modern Hunting Rifles

By Charles Newton (Concluded.)

The .25-caliber rifles described in the last issue meeting the requirements of those sportsmen who are satisfied with a power equal to that of the New Springfield cartridge, we have next to deal with those who prefer the more powerful rifles, of the .35 Winchester center fire and .405 Winchester center fire type, giving an energy of about 3,000 ft-lbs. The logical caliber in which to meet these requirements is the 7mm., and the cartridge with which to meet them is now on the market in one model, the Ross .280. Much has been written of this cartridge and rifle, mostly concerning the cartridge, and in all probability more persons have longed for a rifle using the Ross cartridge than for any other cartridge ever brought out, and this solely because of its velocity. Were this rifle available to the majority of our sportsmen, and were it without serious drawbacks, there would be little excuse for dwelling on this caliber, but a few facts may not be amiss.

As to the rifle itself, it costs the ordinary human, who pays good hard simoleons for his goods, about $70 in Canada, with about 35 per cent ad valorem duty at the border, or about an even $100 in all. The cartridges cost about 10 cents each, and must be imported by the user. Last January a thorough tour of the different houses in New York City in quest of cartridges for this rifle failed to develop a single one on sale in that city. And the makers firmly refuse to sell the bullets or powder for reloading. Hence it is not an attractive proposition to the poor cuss who likes to shoot considerably with the avails of a week's pay envelope. So much on the question of expense. We will now study the rifle and cartridge a little.

The rifle is of the straight-pull variety, hence has neither the direct leverage of the lever action rifles to start a shell, nor has it the more powerful cam movement of the turnbolt actions for this purpose. The shell developes a powerful pressure, hence is likely to stick, therefore it is made with a very rapid taper from head to neck. This involves two propositions which we will consider separately.

First, the shape of the shell involves a large inner diameter, therefore giving a greater thrust on the bolthead than with a shell of less diameter. The rearward pressure on the bolthead, with gases of a given pressure, is directly proportioned to the area of cross section of the inside of the shell at its largest point; this upon the familiar principle of the power of the piston of an engine, either steam or gas. The power derived from a given pressure of gas varies exactly as the piston area. The inner diameter of the Ross shell is .421 inch, that of the New Springfield shell .402 inch and that of the .35 Winchester center fire and .405 Winchester center fire shells is .397 inch. The area of cross section is as the squares of the diameters of the respective shells, on the familiar principle that "like surfaces are to each other as the squares of their like dimensions."

The diameter of the New Springfield shell being .402 inch, it has an area of cross section of .133 square inch. This, under a gas pressure of 50,000 pounds per square inch, gives a rearward force of 6,650 pounds. Squaring the diameters, we find that the Ross has an area of cross section of 1-10 greater, consequently the rearward pressure is 1-10 more, or 7,315 pounds.

Second, the rearward pressure of a cartridge does not come entirely upon the breechbolt, but a considerable portion, estimated at 15 per cent in cartridges of ordinary shape, is absorbed by the shell itself, due to the sides of the shell being pressed firmly against the walls of the chamber by the force of the gases within. To appreciate this just examine a shell thrown from an automatic Winchester rifle, and you can see where it has rubbed against the chamber as it was forced back out. But the Ross cartridge loses considerable of this support due to its being so sharply tapered, thus increasing the backward thrust on the bolt. The net result is, that the Ross action has to sustain a far greater pressure than that

of other rifles, due to the necessity of having such a sharply tapered shell, due, in turn, to the lack of any leverage for extraction, due, again, to its straight-pull design. And reports are beginning to percolate through the press of Ross breechbolts backing up at the psychological moment. Also that there is a "1912 Ross" action on the market. Further, well authenticated instances are coming to light, of inability to extract shells, when the temper of the cartridge case be not just right. The writer has heard no complaints of this trouble when using the Ross-Eley cartridges, but they have been reported through the press concerning a Canadian company's product, and two of his personal friends were, within the past three weeks, unable to use the new cartridges, the shells of which are made in the United States, and which cartridges are the only ones now sold by the Ross company. Frantic telegrams failed to locate any Ross-Eley stuff when it was wanted immediately for a bear hunt in British Columbia, and two Ross rifles are for sale cheap.

The foregoing is written as an apology for describing another cartridge (many rifles will take it, under proper persuasion) for this very desirable caliber. It is made by necking down the regular New Springfield shell to seven millimeter at the neck and loading it with 52 grains Ross powder, made by the Dupont Company, and the 139-grain Spitzer bullet, made by the U. M. C. Company, for this caliber. The result is an instrumental velocity of 2,973 feet per second. Fifty-three grains of the same powder give an instrumental velocity of 2,985 feet per second, while 50 grains of 1909 military powder gave an instrumental velocity of 2,987 feet per second. The instrumental velocity of the Ross rifle in a cartridge developing 3,047 foot seconds, muzzle velocity, is 2,890 foot seconds, or 157 foot seconds less than the muzzle velocity. Therefore an instrumental velocity of 2,985 feet on this basis should mean about 3,150 feet per second. The Springfield attains 2,700 foot seconds, muzzle velocity, from an instrumental velocity of 2,635, and the higher velocity of the seven millimeter gives it about 25 per cent more air resistance to overcome, thus decidedly increasing the difference between instrumental and muzzle velocity. Therefore we have with this bullet a slightly greater velocity than with the Ross. The pressure does not exceed 50,000 pounds per square inch, and, assuming 3,100 feet as the actual muzzle velocity, we have a muzzle energy of 2,974.6 foot pounds.

The Ross bullet is but 142½ grains in weight, this figure being taken from weighing one, pulled from one of their latest shells, the difference in ballistics therefore, is just about represented by the difference in velocity, the Ross claiming 3,100 ft-secs. This cartridge can be used in actions adapted to any of the present military cartridges, such as the New Springfield, Remington-Lee high power, Winchester Model 1895, Mauser, Mannlicher, Krag, et al. For those rifles which use a flanged head shell the only requirement, aside from the above, is to make the shell by necking down the Winchester .405 shell to the proper size, and it makes a duplicate of the other. The writer uses it in a 7mm. Remington-Lee sporting model. All that is necessary for any rifle is a 7mm. barrel, chambered for the proper shell, and you have it. Adolph likewise will furnish these, chambered ready for business, at $15, while if you have the 7mm. barrel all you need is the chambering, costing about $5. An old Spanish War Mauser works over beautifully for this shell, and when it is done you have a rifle more powerful than the .405 Winchester at the muzzle, and one which retains its power infinitely better. The New Springfield Model 1906 cartridge, which has far inferior ballistic qualities, loses but about 16 per cent of its energy at 100 yards, while the .405 Winchester loses 25 per cent; from which their relative efficiency, at the point where the game stands, can be easily understood. Likewise the 7 mm. does not kick one over the fence when fired, it developing much less recoil than the Springfield.

Therefore, for all work to which the .35 and .405 Winchester center fire cartridges are adapted, this 7mm. is more efficient at any and every range, has the advantage of a far flatter trajectory, can be made much lighter and does not develop a distressing recoil. And let us ask those who may be ready to jump upon the small bore as not producing shock, or not leaving a blood trail to follow, just note what the little Savage .22 does to any live thing when it strikes. There will be no blood trails to follow with these high-velocity cartridges at any range at which the most expert can hit once in ten times. It is either a clean miss or a clean kill. No one who has not seen the work can appreciate the "freezing stiff" which occurs when a beast be struck by a projectile moving at the velocities attained.

But there are some who want still more power; who think that one shot, fairly well placed, should drop the largest game animal in America. And the writer is among the number. He believes that there should be no blood trails to follow; that the game should be stopped where it is hit. Many of this mind have been looking up the foreign rifles of .400 bore or larger, using heavy bullets, at comparatively high velocity—and kicking like a mule. They are entitled to attention.

In the gun case stood seven .30 caliber rifles, four military repeaters, one sporting repeater and two single shots. They looked inviting, likewise neglected. The bullets

available, both in weight, style and quality far outnumbered those for any other caliber. But to get them well started in life required boiler room. This was provided by necking the .40-90 Sharp's straight shell down to .30 caliber, loaded with a sharp-pointed bullet, and forcibly reminded us of that old definition of our school days: "A line has one dimension—length."

One of the single-shot Winchesters was re-chambered to take this shell and the charges were worked up. With the 150-grain bullet we obtained an instrumental velocity of 3,164 ft.-secs., equal to a muzzle velocity of about 3,300 ft-secs. The instrumental velocity of a 190-grain bullet was 2,714 ft.-secs., equal to about 2,800-ft.secs. at the muzzle. The 220-grain bullet registered 2,485 ft.-secs., or about 2,550 ft.-secs. at the muzzle, this being a round-pointed bullet. The 150-grain bullet has a striking energy at the muzzle, based on this velocity, of 3,645 ft-lbs., and there is but little more recoil than from the Springfield when shot from the same weight rifle.

But this cartridge, which made a really and truly long-range rifle when using the heavier bullets, would not work in a repeater. Its sole mission seemed to be in single-shot and double-barrel rifles. And here is where Adolph stepped in and helped out. The cartridge was shown him, with the remark that he might use it in his double rifles, but it would not go in a repeater. His reply was to submit a foreign shell of about .44 caliber, designed to be used in the regular Mauser action, and having a head to fit the Mauser bolt, it being somewhat smaller than the body of the sheil. "Neck this down and you have it," said he. And we did. The result was a cartridge of the same powder capacity as the .40-90, but which would work through the magazine of the New Springfield, Mauser, Winchester, Model 1895 and other similar guns of .30 caliber. For those guns, the boltheads of which are adapted to the flanged head cartridges, we obtained some shells for the .404 Jeffery Mauser and necked them down and cut them off, and those heads fitted the larger bolts. Therefore, all that is needed to adapt your .30-caliber Springfield, Mauser, Winchester, etc., to this cartridge, which was promptly christened the "Adolph Express" (he said it sounded like a fast passenger train) is to rechamber the barrel, and he will do this quickly and well.

Computations of the ballistic qualities of the different charges for this cartridge give somewhat interesting results.

As showing the remaining velocity and energy at the different ranges in comparison with the New Springfield the following table is submitted, showing the efficiency of bullets of the different weights and at the velocities obtained, the bullets all having a point of the same shape as the service Springfield.

	Wt. Bullet	Velocity at muzzle	At 1,000 Yards	At 1,500 Yards
Springfield	150 grains	2,700 f. s.	1,068 f. s.	852 f. s.
Adolph Exp.	190 grains	2,800 f. s.	1,310 f. s.	1,006 f. s.
Adolph Exp.	220 grains	2,550 f. s.	1,316 f. s.	1,019 f. s.
		Energy		
Springfield	150 grains	2,440 ft. lbs.	380 ft. lbs.	242 ft. lbs.
Adolph Exp.	190 grains	3,325 ft. lbs.	727 ft. lbs.	429 ft. lbs.
Adolph Exp.	220 grains	3,190 ft. lbs.	849 ft. lbs.	506 ft. lbs.

From the above it will be seen that the velocity of either of the heavier bullets at 1,500 yards is almost identical with that of the Springfield at 1,100 yards, while the energy of the 190-grain bullet at 1,000 yards is almost equal to that of the Springfield at 600 yards, while at 1,500 yards its energy is equal to that of the Springfield at 900 yards.

With the 220-grain bullet the energy at 1,000 yards is equal to that of the Springfield at about 550 yards, and at 1,500 yards it is equal to that of the Springfield at 800 yards.

Therefore, when we come to consider shooting at ranges between 1,000 and 2,000 yards, we have a bullet which is efficient where that of the Springfield is practically impotent.

This cartridge was not designed with the expectation of regularly killing antelope at 1,500 yards, but for those of the Brotherhood of Cranks who have a desire to try really long range shooting it affords a weapon far more adequate to meet the requirements made upon it than any other on the market.

Thus we have covered the present range of power in American sporting rifles, and gone one long jump beyond, with rifles of light weight, light recoil, greater killing power and far flatter trajectory. The principles involved have been proven out in the Ross, in spite of its shortcomings, be they what they may, and in the .22 Savage high power, and we firmly believe that in the near future the American public will learn and appreciate the possibilities of this type of weapons and demand them until they get them. The change requires no radical change in the rifles at present made, except to ream a different chamber, and, in the case of the 7mm., to adopt a

new size of bore—new except to the Remington and Stevens factories—who have already put them out; the first as a 7mm. and the second as a .28 caliber.

The writer's experiments in attaining velocity by increasing the powder room went far beyond what has been given, and the results seem to indicate that the limit in this direction has been about reached until some radical improvement in powder has been made. Our mutual uncle, Samuel, has awarded to the writer a patent upon a new type of powder which will make possible higher velocities, but, as Kipling says, "That is another story." But the writer is of the opinion that no higher velocity is desirable as an aid to accuracy in shooting, so far as game is concerned. Our first desire for a higher velocity than our black-powder arms permitted was solely to obtain a flatter trajectory, that we might minimize the effects of wrongly estimating distance. The increase of power obtainable was not the principal end sought; this came more as a by-product at first. Today the range over which one of the rifles above described will shoot, with an 8-inch trajectory, is farther than ninety-nine men in one hundred can hit a deer one shot in four. Pardon a few figures.

The standard bullseye is 8 inches in diameter for 200 yards; this is equivalent to 12 inches at 300 yards. Taking the figures for the New Springfield, because the rifle is very accurate and the data very complete and very authentic, we find that at this latter range its trajectory height is but a small fraction over 7 inches, and this is much higher than that of any of the cartridges above described.

Keeping in the bullseye at 200 yards, under range conditions, is none too easy for the most expert shot. Under game shooting conditions it is much harder. At 300 yards the wind and light become more of a factor, and this not in the line of assistance.

The foremost authorities upon game shooting estimate the skill necessary to deliver an effective shot at a deer as being equal to hitting an 8-inch circle. We will be liberal and make it a foot. Any shot in a circle a foot in diameter shall be fatal, and we will see what are our chances to score at 300 yards.

The mean average deviation of our present ammunition is 2.3 inches at 300 yards. This means average deviation, not a 4.6-inch group. Some shots are farther away, some nearer the center. But we will again be generous and call it a 4.6-inch group. To hit our 12-inch circle we must keep within its radius, or within 6 inches of the center. Our ammunition has already thrown us 2.3 inches away, and we have left a margin of 9.7 inches which we must hit if we score. In other words, we must be able to hit a circle 7.4 inches in diameter at 300 yards, equal to 4.9 inches at 200 yards, or lose our meat. And this without considering wind, mirage, chances in light, adjustment of sights to zero, position or physical condition. Therefore the statement is made that 300 yards is as far as one can be reasonably certain of killing deer, and this is well within the limits of the 8-inch trajectory mentioned.

But we do not wish to be understood as saying that no further improvements in cartridges will be made, or that improvements in powders will not be of benefit. We think the rifle of the future will have no materially greater velocity than at present in use, but that the improved powders will be utilized in propelling heavier projectiles, with consequent greater efficiency. The increase in length of projectile will give greater striking power, not only at the muzzle, but still more at the longer ranges. This will, in turn, result in further reduction in calibers as compared with the power obtainable, and will be attended with still greater reduction in recoil, in proportion to the energy of the bullet developed. All of which will be found some day embodied in our modern hunting rifle.

Remodelling a Muzzle-Loading Colt

By D. Wayne George.

Editor Outdoor Life:—Mr. Newton's article in the March number started me to thinking about altering an old .36-caliber six-shot Colt, powder-and-ball revolver, which came into my possession when a boy, and up until that time had been looked upon as a relic only. It has an engraving of a naval battle on the cylinder and on the edge of same is engraved the following inscription: "Engaged 18 March, 1843." I am unfamiliar with the Whitney revolver and its workings, but for the Colt the taking out of the cylinder in loading would be very slow and unsatisfactory.

I found that the bore of this gun was too large for the .38 center-fire cartridge, but that the .38 rim-fire fitted fine. I therefore had a machinist bore the chambers out to take the .38 rim-fire cartridge, and then putting the cylinder in a lathe he turned a light groove around it a little over 1 4-10 inches from the front end. Then with a hack-saw he sawed in the groove entirely around the cylinder and down nearly as deep as the inside edge of the cartridge chamber, then putting it in a vise, with the tube end up, sawed several cuts straight down to the groove, cutting away a portion

of the metal each time. This left some square edges, which had to be filed down far enough to let the rim of the cartridge pass when being inserted, care being taken

Fig. 1

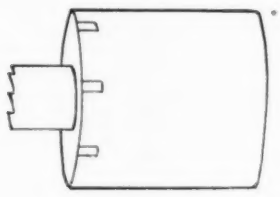
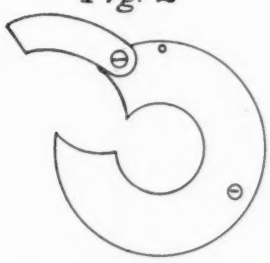


Fig. 2



to leave the projection with the notches on nearly round, thus finishing the work on the cylinder and leaving it as shown in Figure 1.

Next comes the plate (Figure 2), which is of steel 3-10 of an inch thick and in diameter the same as the cylinder, but the top is left ½ inch thick, from which is filed a square projection, which extends back into the hammer groove 2-10 of an inch and through which a single firing-pin is placed, with a firing-pin spring to keep it flush with the face. This projection necessitates the shortening of the hammer and enough so that it will not hit the plate, which would tend to jar it loose, and the hammer should also have three notches, one for full cock, half cock and one to hold it slightly away from the firing-pin. The loading gate is made of thin steel sunk flush with the face and hinges on one of the screws, which hold the plate to the frame. This could be greatly improved upon by making it heavier, more like that on the Bisley and Frontier models, Colt. On the right-hand side, back of the gate, the frame is filed in deep enough to make way for the cartridge being inserted.

In operation the gate is raised, the hammer left at half cock and loaded in the same manner as the single-action Colt, which is much more convenient than removing the cylinder from the gun. The proper alignment of the chambers is insured by the original notches being on the cylinder instead of the plate. Thus altered it is just as easily loaded as the single-action, but somewhat slower to unload, a heavy brass wire being used to punch the empty shells out. The cylinder is 1 4-10 inches long and handles either the short or long .38 rim-fire cartridge and does fine target work up to 200 yards, which is as far as I have tried it. The total cost of alteration was $3.

An Experience With the Maxim Silencer

By I. J. Bush, M.D.

I see in the June number of Outdoor Life Mr. C. F. Lass wants to know about the Maxim Silencer, and as I have had an experience with one I will tell him and the other readers of Outdoor Life about it.

During the Madero revolution in Mexico I picked up on the battlefield a 7 mm. Mexican Mauser carbine, and as I had seen the shooting qualities of the little 18-inch-barrel gun tried out on several occasions (when I was sometimes the target) I was much pleased to possess one, especially as it only cost the exertion of rolling a dead Federal soldier off of it, and I sent it to Mr. Windhammer of Los Angeles for re-stocking, and when he returned it I had a little beauty of which I was very proud.

Soon afterward I was induced to buy a Maxim Silencer made for the Mauser gun. The coupling does not screw on as in the ones made for a Winchester rifle, but slips down over the barrel and is made fast by a set-screw. I slipped the silencer on the barrel and then found that the screw would not go through without a groove being cut on top of the barrel. I did not care to mutilate my gun in that way and wrote the Silencer people about it. They replied that the groove required would be no deeper than the slot for inserting the sight and that it would not hurt the barrel. I hesitated for months, but finally took the gun to a local locksmith and he cut the slot and fastened on the silencer. A few days later I visited my ranch and took the gun with me. I fired ten shots during the trip, and at the eighth report I realized that something was wrong. Examination disclosed the fact that the discharge of the high-power cartridge had broken the screw-bolt and driven the silencer forward with the broken bolt ends lodged against the sight. I gave the gunsmith the silencer as pay for filling in that unsightly groove I had foolishly allowed him to cut in my gun barrel and I am through with Maxim Silencers.

There are other reasons I do not like them: They are unsightly, sticking as they do, on the end of a gun. They do not reduce the report in a high-power gun sufficiently to be of any great benefit.

Let your gun fall once or strike the silencer against anything and it is out of line and liable to damage both gun and shooter at next discharge. I have never yet been convinced that they do not retard the shooting qualities of a rifle. For small-bore guns that are used exclusively on target range they may be all right, but even then I fail to see where their usefulness comes in. For real use in the mountains, where the rifle is carried in a case on the saddle, they are worse than a nuisance. My experience has been that of others in this section, and the local arms dealers of El Paso refuse to keep them in stock, although the sale of firearms and everything pertaining thereto has been very brisk for the past year or more.

Texas.

The .35 and .405 Winchesters on Deer

By C. A. Neal.

I am aware that the discussion of the relative merits of the large and small-bore rifle covered the subject pretty thoroughly, and while I am of the big-bore persuasion, being the owner of a .405 Winchester, I am inclined to think the small-bore men over-

Deer killed by the author and friend.

estimate this model in particular.

Enclosed you will find a picture of two deer, killed on Gold Creek, twenty-five miles west of Quilcene, Wash., by the writer and O. B. Gwin. During the excitement of having our "pictur tuk," we each got behind the other fellow's deer.

As you will notice, one has its neck almost severed. After killing it Gwin started to cut off the head to facilitate the packing out of a bad cañon, but I persuaded him to desist and the two were brought into Seattle intact.

Gwin, like myself, is partial to the box-magazine Winchester, his using the .35 cartridge, and the course of this bullet can be seen, having entered the deer's shoulder just back of the knife cut and emerged at the black spot on the thigh, just beside my shirt collar. (See cut.) One shot was sufficient, the deer dropping in its tracks. As in my case, his deer was about eighty yards distant and seventy-five feet higher up the hillside, but coming straight to him, while I had a side shot, running. My first bullet entered back of the shoulder, missing the heart, emerging on opposite side; the next through shoulder, a little too high up and farther front; the third and last struck right leg just about where it joins the body, breaking the leg and crushing the shoulder bone on left side and stopped just beneath the skin. During this shooting the deer, which was running in fairly open scrub pine, covered about one hundred feet from where first shot to where he dropped at last shot.

Now, I'm not a crack shot—one who can place 'em every time—or it would not have taken three shots at a running deer for me to get my meat. Of course, I tried to place each shot in a vital spot, but the best I could do, as the pictures show, was to place three shots in a circle, probably 6 inches in diameter, on a running deer at about eighty yards. Of course, it might have been the terrible recoil (?) of my .405 that caused me to do such poor shooting, but to be honest, though I'm only a little fellow, weighing abont 140 pounds, the recoil does not bother me a bit, and I doubt if I could have done better shooting with any other gun made.

Say, just take a good look at those deer. Aren't they beauties? Neither one had a pound of meat spoiled because of the terrible bullets used, either.

Here in Washington, before a transporta-

tion company will handle a deer, it is necessary for the hunter to go before a notary and make oath that said deer was killed in a certain county and is being shipped to another by said hunter for his own use, and not for sale. So that if my word is questioned it is possible to get proof from the records at Quilcene that these deer were dead when shipped. Also for further proof I might refer to Bert Macomber and Sam Clements of Quilcene, who packed the deer out of the mountains for us, as well as J. J. Lohman of Port Townsend, who snapped the picture of us and the deer.

I fancy I hear a small-bore crank saying: "If it takes three shots in the shoulder of a deer with a .405 to get him and another is killed by one shot from a .35, then in the same ratio a .30-30 is about the proper gun." Maybe so, but the way that buck carried the two first .405 bullets was a surprise to me, and if it had been a grizzly instead of a deer, and he had traveled the one hundred feet toward me, I would have been more firm in my belief that the .405 is none too large.

Washington.

Powerful Guns This Man's Choice for Big Game

Editor Outdoor Life:—I am much interested in the discussions going on in regard to guns and ammunition. As I started my field sports sixty-three years ago with an old flintlock Yeager of an ancient courier of Boise who had grown too old to use it himself, and since then have used all kinds down to the latest models. The best and luckiest gun I ever used was a .50-95 Winchester Express, which I used from 1880 to 1894, and now use for ordinary shooting a .303 Savage, but when taking hunting trips to Jackson's Hole, or in mountains for elk or bear, I have my .405 over my shoulder, as I am too far advanced in age to make a very good get-away and have failed to acquire the skill of my young sporting friends of magazine reputation who shoot out a particular hair on a running deer or coyote.

I confess that I am not an expert on ballistics, but by experience have come to know what kind of a gun I want and get it, and use it, and a man is either a crank or tenderfoot who cannot select from our good and well-made American rifles one that will kill any game on this continent, and if he wants bear, and will crawl into some dark covert in some narrow cañon for him, his heart will throb a little less rapidly if he has a bear gun, and a four-bore will not feel any too big and he may wish he had one instead of a toy if he ever lives to get out.

The cap-box displayed in the June number of Outdoor Life was in use in the '50s before the Civil War and was quite common then. I used one myself and found very handy on a cold day when fingers were all thumbs.

H. D. WINSHIP.

Wyoming.

The .25 Calibre Colt Automatic Pistol

Editor Outdoor Life:—What is the matter with the .25 Colt automatic pistol? I have seen very little discussion concerning it. I understand large sales have been made and would like to make a few statements concerning it. I do not pretend to be a pistol shot but have used the .32 and .25 Colt enough to form a fair opinion of them.

I desired a small, powerful pocket weapon and decided upon the .32 Colt. Then I got a .25 and used soft point bullets. I found this pistol had sufficient penetration and good shocking effect. The .32 was a very powerful shooter, but at that time I used full patched bullets and was hardly satisfied with the shocking effect.

With the .25 I have finished a couple of coyotes, one bob cat and shot several dogs. I killed a very large sick calf and an old cow. Also have had occasion to use it upon several transient tom-cats. In shooting the cow, the bullet entered at base of ear and upward. The cow fell as readily and appeared as well paralyzed as when I used the .38 Smith and Wesson. I shot once more for a surety. I was well satisfied with the results on all other objects, especially on the tom-cats. Everyone realizes the vitality of the tom-cat, yet only one I shot made a break for fifty yards before he gave it up.

As a weapon for the average woman's use, this little gun is perfect, for several women who were absolutely unused to a pistol were able to make good, close hits with mine after ten rounds had been fired. The average woman is badly confused in using a revolver by the recoil. Just as soon as a woman understands to naturally point the .25 and hold it on the object as she increases the tension of trigger-finger and palm inside at base of thumb upon the safety-grip she knows she can hit the object. Absence of recoil of course assists a great deal in establishing her confidence in the gun and herself and this soon brings accuracy for quick repeat shots. When a woman first attempts using the powerful revolver she fears the ensuing recoil and is therefore slow to gain precision in rapid shooting.

Of course I don't care to go man hunting

with the .25, but for defense, which generally occurs at close range, this gun can do some real mean work. Carrying an extra clip of cartridges gives the advantage of rapid loading. As to the safety factors as considered in respect to carrying and handling of this gun I believe any further application would be superfluous. Next to the Smith and Wesson hammerless model revolver I consider this .25 as safe as one could desire.

As to certainty of funtioning I have never had a jam occur. Once I found a shell which was cracked on one side and barely entered the chamber by hand-loading. It fired, extracted and functioned the arm all right. The grip is, of course, absurd for target work. However, I can grab the gun quick and find my hand fits it very readily and safety is thrown down with thumb very readily and easily. There are a variety of holsters provided for this gun and several of them are especially adapted for the use of women. However, such a little gun fits anywhere, even in a shoe-top of a colored girl in San Francisco who was detected by an observing and up-to-date officer.

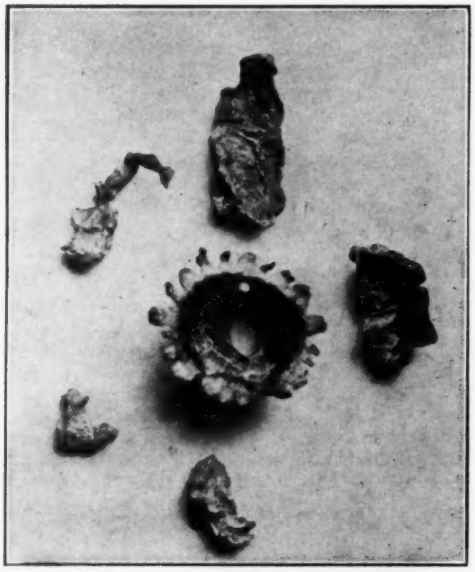
California. C. B. G.

Plate Glass and Fine Sand as Bullet Stoppers

Work of .405 Winchester bullet after passing through plate glass.

Editor Outdoor Life:—I am sending you photos of a board that was shot into with a Winchester .405 caliber, hard-point bullet, first passing through a heavy piece of plate glass 20 inches in front of board. The glass was ⅜ inch thick and 1 foot square. The largest piece of bullet penetrated five boards only after passing through the glass. The boards were ⅞ inch thick, soft pine. This kind of a bullet has a penetration of 48 soft pine boards ⅞ inch thick. It shows that the glass has a stopping power of 43 boards.

The photo of bullet I send you is of a .405 hard-point. It was shot into a paper sack filled with dry, fine sand, the diameter of the sack being 8 inches. It entirely stopped the bullet, bursting it all to pieces, as you will see. It made no marks on a soft pine board set close behind the sack.



.405 Winchester full metal-patched bullet after firing into bag of fine sand.

Iowa. GEORGE SHULL.

For a .25 Rim-Fire Lever Action Rifle

Editor Outdoor Life:—In Mr. C. H. Drew's article in Outdoor Life for March on a lever action rifle to handle the .25 caliber Stevens rim-fire cartridge is what I have been looking for, but up to the present time have not been able to find one or get any gunsmith to rebore one for me. I wrote you some months ago to give me the name of some good gunsmith that I could get to rebore a '73 model .22 caliber to handle the .25 Stevens rim-fire and you gave me the address of Schoyen & Petersen of Denver. I wrote to them. They answered, saying they did not re-bore repeating rifles.

Now, I don't care about a gun of that caliber being so heavy as the old '73 model, but would much rather have one like Mr. Drew mentions. A Winchester model '92 would be in right style to my way of thinking, except that I would like a 24-inch barrel instead of a 20-inch as Mr. Drew states. Now I have a Winchester .22 rimfire '90 model which I think is the best gun on the market today in the .22 class, but I am like Mr. Drew; I prefer a gun handling a cartridge a little larger, but still not as large as the .32 rim fire. I think if there was such a gun on the market today that it would command a large sale. I for one would buy one tomorrow if I could find out where I could get it. Let's hear from some more of the boys and see if there is not enough to induce some good company to put out such a gun. J. F. HARRIS.

Calif.

For Shooter with Defective Eye-Sight

Editor Outdoor Life:—Regarding the communication from David P. Platt and your reply in the June number, I think that perhaps I can help the brother out a little.

Evidently he does not stand in correct position for revolver shooting, because if he did, he would not know which eye was used in lining up the sights with the target. The gun should be held according to the physical conformation of the shooter, but rather laterally than in front of the body. I would say that the right arm should be fully extended, but not strained, in a direction between 20 and 45 degrees from a line drawn through both shoulders.

The elbow is fully extended because the "locking" of the joint takes off much muscular effort, relying on one set of muscles—those attached near the shoulder—to keep the proper elevation of the hand, instead of having to take care of two sets, those at the shoulder and those attached near the elbow. The position is lateral to avoid pressure on the heavy muscles attached to the chest in front, and this position also places the shoulder-cap muscles in more nearly direct line with the extended arm, leaving them in the direction of their most effective action.

With the gun held in this position there is no strain, and I am sure that a person watching the shooter could not tell which eye was used in getting the line of shooting, and the shooter himself could not tell which eye was doing the work, unless he deliberately closed one eye, which should never be done when using the short weapon, and no more than necessary with any other weapon.

I write from experience, as my own right eye is so poor, even with glasses, which I wear constantly, that I cannot shoot a rifle from the right shoulder. I am no "crack shot," but have done considerable revolver shooting for many years, and can hold my own with most amateurs. I shoot the short gun with the right hand, and I do not think that anyone would say that my shooting position was "strained" or, in fact, any different from that of the right-eyed shooters. My right eye is so poor that I keep both eyes open when firing the rifle from the left shoulder, and also, of course, the shotgun, though as it happens, I use either shoulder with the last gun, according to the way the fowl happens to be flying, but when using the right shoulder I must close the left eye, which was the way in which I first learned to shoot.

I certainly would not advise Brother Platt to undertake to learn to shoot with the left hand, as I had it to do with the rifle and know how slow it is, after once having trained the right hand and arm. Not only this, but it is just as hard to teach the right extremity to act the secondary part as it is to educate the left side to take the principal rôle. M. A. WALKER, M.D.

Montana.

For the Snap Shooter

Editor Outdoor Life:—I notice a reader asks concerning the relative merits of the lever and trombone .22 rifles as guns for snap shooting. Now, I have owned and used both types of rifle and must say that for all the time and every use I prefer the .22 Remington, target grade, trombone.

I can hit a can five times in the air with the Remington to three times with the lever. In shooting at running game, or objects rolled along the ground, the trombone also leads.

I believe the .22 Winchester can be fired a bit faster than the Remington, but I like the side ejection. As to ease of cleaning, the lever and the Remington trombone are about on a par. Both can be dismounted, cleaned from the breech and assembled without tools. When cleaning the barrel it is a good plan to run your slotted rod with an oiled patch in it down the magazine tube, as dirt and grit collecting there adhere to the bullet and prove disastrous to the interior of the barrel.

After using clean with some good, standard oil or powder solvent, insert a rust-rope,

and your rifle will be in first-class condition when you wish to shoot again. By using a wire scratch brush you can use .22 short in a gun bored and chambered for .22 long rifle. Dip the brush in oil and clean the chamber well with a rotary motion. I have shot about six thousand .22 short through my rifle, and there is only the slightest trace of a score in the chamber. This was done before I began using the brush.

In regard to the Maxim Silencer, if the gentleman will write to William Wiggins, Company F, Sixteenth United States Infantry, Fort Seward, Haines, Alaska, he will get an expert's opinion on them; at least, in connection with the service rifle.

I hope Mr. Thomas won't take exceptions to my methods of slaying his game; or, perhaps, we can arrange a match by mail.

Nebraska. D. WIGGINS.

An Automatic Holster

Editor Outdoor Life:—You will find enclosed a photo of an automatic gun holster which is the result of an article that I read in one of your back numbers about a year ago. It related to the common gun holster as not being handy to carry, and that it had not been improved upon. That article gave me the idea of an automatic holster, of which the accompanying photo is a description. I am obtaining a patent on it and have put out several of them here in the city of Oakland which have paid me very well. GEORGE M. WANEE.

California.

A home-made holster.

Organizing a Gun Club

IX.

Proper Loads.

This of course with the more experienced shooter is largely a matter of taste. Some prefer one brand of powder and some another; some like a 3-dram load of a bulk powder (or its equivalent of 24 grains of dense powder), while others pin their faith to heavier loads.

For 16-yard targets, that is to say, for shooting at targets from the 16-yard mark, a 3-dram load, or its equivalent of a dense powder, is all that is necessary. The experts, however, because they are often handicapped back to 20 yards or more, sometimes prefer to shoot a heavier load all the time, and thus become accustomed to it. The extra distance requires a little more powder behind the shot.

The novice is never likely, so long as he is a novice, to be placed farther than 16 yards from the trap, and therefore he should never use any load heavier than 3 drams; and while the experts may prefer an ounce and a quarter of shot in their heavier loads, the novice will do wisely to select and stick to a 3-dram load with an ounce and an eighth of shot. This makes a light, snappy load, and gives so little recoil that a be-

ginner whose shotgun comes anywhere near fitting him can shoot it all day, and feel little, if any, soreness in his shoulder the following day.

The Guncase.

While every shooter should have a case for his gun, tastes differ so widely on this subject that it is best to leave the choice to the individual.

Guncases can be bought as low as 50 cents, but these are light canvas cases which do little to protect the gun from injury if it should fall or be knocked down. If one's gun is worth anything (and a gun that fits you is certainly worth a whole lot), spend a few dollars, and get a good stout, well-stitched sole leather case, one that will stand by you and your gun for a number of years, and always give satisfaction.

Shell Bags.

These articles, the best of them made out of leather, are designed to be fastened round your waist by a strap attached to them, and to hold your shells when you do not wish to carry them in your pockets. They do not cost much and are quite a convenience at times, particularly in warm weather when a coat or sweater becomes uncomfortable.

Nowadays cheap canvas belting affairs, built to hold a box of twenty-five shells, are taking the place of the leather bags, and appear to give good satisfaction.

The novice can decide for himself whether he wants anything of the kind, and if he decides in the affirmative, the cost of a trial won't embarrass him financially.

Shooters' Gloves and Hand Protectors.

Trap shooters who use double guns find that the rapid firing of shot after shot, particularly during the warm weather, heats the barrels of the gun to such an extent as to make it uncomfortable, in fact, almost impossible to grasp them properly without some protection for the hand.

The first devise of the kind to amount to anything was the Heikes Hand Protector, invented and patented by R. O. Heikes, the well-known expert shot. This hand protector is made of metal, covered with leather, and is of such a shape that it fits over the barrels of the gun, leaving an open space for the eye to see down the rib of the gun.

Latterly a glove on the left hand has come into popularity. It is made of strong pliable leather, opens on the back and is also ventilated there. They don't cost much, and almost any sporting goods house carries them in stock; left-hand gloves for right-handed shooters, right-hand gloves for left-handed shooters. As a matter of fact any loose fitting heavy glove will make a good shooting glove and a right-handed glove turned inside out will make a good left-hand shooting glove. Try it and see for yourself. In order to thoroughly protect the hand from the heated barrel the palm of the glove must be solid, hence the necessity for the glove buttoning on the back of the hand.

Cleaning Rods, Etc.

Don't forget a cleaning rod, a screw driver or two, an oil can, waste, etc. While it probably does not improve to any great extent the shooting of a gun to clean the inside of the barrel, yet all the parts of a gun should be regularly oiled, the barrels rubbed over with an oily rag before being put away, and the inside of the barrel wiped out to avoid rust forming from moisture and the barrel thus becoming pitted with rust spots. All these accessories can be purchased cheaply enough at any sporting goods store.

About the only other accessories to the sport that the trap shooter would need to make him prepared for any emergency would be a shooting coat or vest, or perhaps a sweater, and also a pair of shooting glasses. These several items of a trap shooter's outfit were so well covered in "Some Hints to Beginners," referred to earlier as having been recently published by the du Pont Company, that it seems best to quote what was written therein on these subjects.

(To Be Continued.)

Prefers Rifles of Moderate Power

Editor Outdoor Life:—I noticed an article in the April number of your splendid magazine by C. V. Oden, in which he "knocks" the .25-35 by saying that it is not a deer gun, inasmuch as the caliber is too small, etc. Mr. Oden says that he has only shot one deer with that size rifle, and that the deer ran about sixty yards with a bullet through his heart, and that he had considerable trouble in finding him after he fell. I have used nothing but a .25-35 in my hunting, which covers a period of about twelve years, having used a Winchester of that caliber for about seven or eight years, which I sold and bought a Remington Automatic just as soon as the factory began to make that caliber, and up until last season have killed the limit in my state (which is five deer) all with a .25-35, and, furthermore, have never had but one to get away that I had hit, and never had to hit them but once, with one exception, when I hit one twice before he would stop.

Game frequently runs quite a distance with a death wound. In fact, I was on a bear hunt three years ago, and one of the

party shot a bear that weighed 550 pounds, coming directly towards him, in the neck with a Krag-Jorgenson, and the bullet was found near the root of his tail. He fell, but got up again, and went back into the swamp that he had just come out of, about one-quarter of a mile distant, and ran upon a man that was in the swamp, driving it with the dogs, and he finished him with a load of buckshot at about fifteen feet. I am free to confess that I would not care to run up with a moose or a grizzly with one of them, but for deer, black bear, or anything else in this country it is amply sufficient. Most of the hunters in this state use .25-35 or .30-30, and a man that says either of them are not big enough for deer or any other American game, especially the .30-30, must be hopelessly prejudiced. "OLD SPORT."

Florida.

The Denver Handicap

During the month of September, the 10th, 11th, 12th and 13th, as announced in our last issue, there will be pulled off in Denver, under the management of A. E. McKenzie, the Denver Handicap at targets, with $5,000 added money. Mr. McKenzie states: "It has been my aim to make this tournament as plain as possible, thereby relieving it of any complications that might be misunderstood. I have promised this event for many years, and now it is up to you to make it the greatest event ever recorded in trap-shooting history."

Letters and entries from shooters all over the country are being daily received, and it looks now as if this would be the very biggest event ever recorded in trap shooting history.

"The Long Shooters" in Book Form

When Mr. Altsheler, the author of "The Long Shooters," first published an account of 300 yards revolver shooting at the Pewee Valley live turkey shoot, New Year, 1910, the report was vigorously arraigned as being not only untrue but impossible. This equaled rifle records, and men high up in shooting annals joined in the criticism. There ensued an acrimonious controversy between the Pewee shooters and their critics, which raged from the Atlantic to the Pacific for months, in the newspapers and magazines. Bared of irrelevant personalities it narrowed down to the question: "If the Peweeites can win one turkey out of every four or five shots fired offhand with revolvers at 300 yards, others can duplicate it." Thereupon shooters of national reputation like Hardy, Haines, Topperwein and others, attracted to the record-making shooting, determined to try it out for themselves, and much to their own surprise and to the further enlightment of the public, equaled the Pewee record.

Briefly, this is the story of a new chapter in marksmanship as set forth in this volume. It gives the history of the turkey shoot and perpetuates some of the dearest traditions of Colonial America. Civilians and soldiers, amateur and professional, are alike interested in the subject. "The Long Shooters and the Origin of 300 Yards Revolver Shooting," by William Brent Altsheler (introduction by Ashley A. Haines), is illustrated and published by Outdoor Life Publishing Company, Denver, Colo. Price, 75 cents.

Experiences With the Maxim Silencer

Editor Outdoor Life:—In response to Mr. Lass' enquiry about the experience others have had with the Maxim silencer wish to state that I had a .22 caliber W. R. F. rifle fitted with one, also a small Winchester bolt action .22 caliber shooting the short and long cartridges. Up to about 600 shots it worked O. K. I was always careful to shake out any powder grains remaining, but from there on there was no telling where the bullet was going to land. I wrote the general agent in San Francisco, and was advised to use Nitro Solvent and did so, but to no avail. Then, on my own hook, I used compressed air, boiling water, gasoline, kerosene, heating it to a red heat, Christian Science, and prayer for a week. Nothing doing. The trouble lies in the powder residue being oily and sticky which soon "cakes up" when it is next to impossible to get it out, as there is no way to get at the "innards" of the critter. Had a gunsmith try it, but he gave it up. The inaccuracy is due to the blast of air coming out unevenly, which is bound to occur when badly "caked up." The report is not muffled in the slightest.

But when new and clean, it is everything claimed for it. Have shot mine within 60 feet of a friend and not pointing toward him and he did not know I fired. For exterminating melodious and marauding Thomas cats in districts where shooting is prohibited, it is a joy to work with. In .22 calibers the sound is eliminated, but in

the higher calibers and velocities (900 feet per second and over—am I right?) you get the report, but the recoil is very much less.

California. DR. E. M. SCOTT.

Editor Outdoor Life:—As there has been no reply to my enquiry regarding Maxim silencer, and as I have had private letters from parties who know me asking me to give more explicit information in regard to silencer, will say when I saw an advertisement and cut in one of the sporting papers from the Maxim people representing a man with a .22 caliber target rifle fitted with silencer, shooting into a fireplace for target practice, a cat lying on a couch, and a dog on a rug apparently asleep undisturbed, it struck me what a fine thing it would be to construct a 75-foot range in the back yard, have a special target rifle fitted with silencer, telescope, special stock, etc., where I could have fine shooting whenever the spirit moved me. I had it all fixed and started to do business. Not only ours, but all the neighbors' cats and dogs were in an uproar immediately; the neighbors themselves were looking out their back doors to see what was the trouble and for fear they would telephone for a policeman I promptly hid the gun. I used the smokeless cartridges which, in their present form are unfit for target practice as they are irregular in shooting and will ruin any barrel in a short time in spite of the very best care, due, I think, to faulty priming.

I should like to hear from others through Outdoor Life in regard to the above, and what success they have had with the .22 caliber silencer. Any suggestions for overcoming the trouble will be appreciated.

Colorado. C. F. LASS.

Editor Outdoor Life:—In your June number, one of your correspondents asks about the Maxim silencer. He says his experience has not been very satisfactory. Probably he had something wrong with his, as he says he bought it when they first came out. I have had experience, both with those which came out about three years, and also some of those which have been put out recently. In all those I have used I have found them to be a decided success.

I live on Long Island Sound, where we have plenty of wild duck in the season, and I live in a pretty thickly settled locality. Ordinarily, I would not be able to enjoy duck shooting, especially in the early morning, without offending somebody. With the silencer I am able to shoot all I want without troubling anybody. I can put up ducks which are out too far, and, in many cases, they will come in closer. They hear the bullet strike the water, but cannot hear the gun. I enjoy using my silencer very much, indeed, and would not be without one. As for noise, they absolutely do away with all of the report noise on .22 rim fire ammunition, and in the matter of accurate shooting, I can show any of my friends a better target with the silencer on the rifle than with it off, they shooting the gun themselves. I account for this by the fact that people flinch, even when shooting .22 caliber, a good deal more than they think they do. The Maxim silencer is a good thing and if your correspondent will tell his troubles to the makers he probably will get fixed up all right.

HARRY J. BROADHURST.

Connecticut.

Editor Outdoor Life:—In looking over your pages I find a query about the Maxim silencer by C. F. Lass of Colorado. I have owned one for over a year and it is perfect to-day. I fitted it myself and it works perfectly. Standing 18 feet from it one can hear nothing but the hammer fall as though one were snapping the gun.

Would like to ask one question concerning an old shotgun belonging to my father. It is a 10-gauge double gun and has "U. S. Arms Co." stamped on each lock. Could you tell me if this company is still doing business or not, and if they are, give me their address. W. J. GUNN.

Oklahoma.

A New Remington High-Power Repeater

The American big game hunters will be more than pleased, we feel confident, when they are informed that the Remington Arms-Union Metallic Cartridge Company are soon to place on the market a high-power rifle of light weight, excellent balance, symmetrical form, and one capable of showing speed in operation only exceeded by the automatics.

This arm is of the well-known trombone type which has been repeatedly called for by the American shooters for years, is hammerless, has tubular magazine with capacity of six shots, and at first will be supplied chambered for the Remington-U. M. C. autoloading cartridges in .25, .30 and .32 calibers, which so many have found perfectly adapted for all big game found on this continent. Later, we presume, the arm will be supplied adapted to the .35 Remington autoloading cartridge and, possibly, others of the more popular calibers as well.

The rifle, from a careful examination of same, works easily, smoothly and, from our limited experience with one of them, handles the cartridges through the mechanism, which is very simple and strong, with lightning speed and with absolute certainty. The

arm is light, of convenient length for hunting purposes, the barrel being round, slightly tapered, and 22 inches in length, is of the "take down" type which permits of easy inspection and cleaning of barrel from breech when desired, and can easily be packed in small space which will readily be appreciated by the great majority of shooters everywhere.

This rifle has a beautifully modelled shotgun butt stock with as neat a pistol grip as the most exacting could desire, said pistol grip being located where a pistol grip should be, near the trigger guard, which makes it of some practical benefit to the user—in other words, this feature will be recognized as being more than ornamental.

Made by a company with the reputation for manufacturing arms of the highest attainable standard, adapted to the popular line of cartridges as it is, made with a type of action so long desired, having the solid top, solid breech, strong extraction and positive side ejection of cartridges, combined with the well-known Remington accuracy, this rifle, we predict, is certain to become one of the most popular rifles among the big game hunters that has ever been placed on the market. In our next issue we hope to hand our readers a full description of this arm with cuts showing gun and mechanism.

Prefers the Savage

Editor Outdoor Life:—From time to time enquiries have appeared in the sporting magazines regarding the Savage rifle—whether it is accurate, whether its action is reliable etc. For the benefit of these enquirers and others who may be looking for the best in a sporting rifle, I desire to write a little of my experience with the Savage.

During the past eleven years I have been using these arms, most of the time in India where game of many kinds is abundant. I have also during that time used, to a less extent, the Winchester, Marlin and Stevens as well as several rifles of European manufacture, both double and single barrel, and bolt actions of various types.

By proper sight adjustment and the use of Ideal tools to reload my ammunition I had no trouble to get accurate shooting from all the American-made arms I used. I do not wish to condemn any of our standard American-made arms, but in the matter of safety, absolute reliability of action and model, I have my choice—that choice is the Savage.

There are many reasons why I prefer it, some of which are: It is hammerless. The model admits of placing an aperture sight at exactly the right place. It is lever action. One's aim is less disturbed in shooting in a strong cross wind than with a rifle having a tubular magazine.

I have used three calibers of the Savage rifle, the .303, .32-40 and .25-35, and always with the most perfect satisfaction. With these I have killed over three hundred head of game, mostly of the deer and antelope species but quite a number of the dangerous big animals of India.

Have been in some pretty tight places but the Savage never failed me. Not one of these rifles ever missed fire, failed to extract, eject or re-load. I never had a part break or get out of place and never had the action jam. In accuracy they were the equal of any and excelled by none. In short, they always did exactly what was expected of them.

I shall be surprised if their new Hi-power .22 does not become the most popular caliber manufactured today, as it can be loaded to give any power from a .22 short to a .30-30. V. G. McMURRY.

California.

A Big Game Hunter Talks of Power and Caliber

Editor Outdoor Life:—There is one subject on which I would like to say a few words and that is the rifle for big game. Since coming to Idaho in 1903 I have had, perhaps, unusual opportunities to observe the effect of our modern arms on large game and to compare with the old large bore arms of twenty years ago. Certainly no one may dictate what arms are to be used in hunting and no man of sense would wish to try. Mr. Haines believes that the .30-30 class are about right for deer and I believe that he is not far wrong, though I prefer a little more steam for my personal use. We have, however, the new .22 just on the market, a cartridge that was worked out for small game shooting by one of our foremost riflemen. It is shown to have an energy about equal to the .40-70 and .40-82 of black powder days, cartridges that gave excellent results on our largest game Up to date I have seen nothing but soft point bullets advertised for sale and have been informed that there is no immediate intention of furnishing full patched ammunition. What will be the effect of one of these bullets on a deer that is standing in such a position that the vitals cannot be reached without penetrating heavy bones and muscle? Your twelve hundred and odd pounds of energy is expended a few inches under the skin and the jagged copper jacket is

firmly fixed in the wound. Arms have changed since Mr. Van Dyke wrote "The Stillhunter," but deer are about the same and as he pointed out, penetration is about as important as anything. You must reach the vitals of your game and in these days you must take shots as you find them. The present .25-35 cartridge with its 117-grain bullet gives much more penetration than the new .22 can hope for and yet is apt to lose game for the above reason.

I do not want anyone to think that I am "knocking" the new cartridge. I ordered a rifle to use it as soon as I found that it was on the market. It was perfected for small game in a settled country and its lack of penetration is one of its virtues for this work. If a full-patched bullet is put on the market it may, with its high velocity, give an explosive effect at short range, but I am inclined to doubt if a 68-grain bullet of .22 caliber will give much shock.

I am not trying to argue that the .405 should be used for deer or that we should carry a .45 cordite for elk and moose, but it is well to remember that almost all animals fairly hit with soft point bullets die from the effects of the wound. In most states the law says that we may kill but a limited number of game animals, and I believe that all true sportsmen should carry arms that they believe equal to the work in hand.

Fish that are lost through the use of light tackle are, in most cases, little injured; but few more birds are crippled with a 20 or 28 gauge than with a 12; but the deer that is hit by a modern soft point bullet is doomed to a death not pleasant to contemplate if not disabled on the spot.

Much has been said about the amount of meat spoiled by powerful rifles. I have killed six elk and one moose with my .405 and I honestly believe that I have wasted much less meat than my friends who use light rifles. In a number of cases I have seen them shoot three or four shots at an animal, wounded and running through the timber with only the hind quarters for a mark. Of course, no one ever does this sort of thing for publication, but I am talking of things that happen in the woods.

I have had no chance to try the '06 Army cartridge on game, but from what I have read I believe that it is the best thing we have ever had for general big game shooting. For my own use I should choose it even for deer on account of its low trajectory and great accuracy, things that count where long shots may be necessary though not essential for timber shooting.

I was moved to write this because I see that the new gun is being advertised for deer. The spectacle of Newton, Haines and Crossman all on one side was too much for me. I seldom disagree with the two former and I certainly never expect to agree with the latter. I haven't a doubt that Mr. Haines can kill deer with the new Savage, but I do not believe that it is a good thing for general use and our American sportsmen are inclined to use the lightest rifle that they feel will answer the purpose.

Idaho. C. L. SMITH.

Remarks Suggested by Mr. Smith's Articles

The preceding article, with one in the May number which was also written by him, has proven of exceptional interest to me, and as the author of these articles has asked my opinion concerning some suggestions he has offered concerning a lever gun which is to be somewhat different than some we now have, I hasten to comply, realizing, however, that it may prove of little value when rendered. But first I want to make a few remarks concerning that .22 Savage high-power rifle which just now is causing such a stir among lovers of high velocities, flat trajectories and light recoil.

I do not remember exactly what I may have written concerning the Savage .22 H. P. as a deer gun. I know that mine failed to reach me in time to use on that game last season, though I have faith enough in its killing power to look anxiously forward to next season when I hope to test it on this game. I am aware that deer are often lost by some soft point bullet failing to reach a vital part due to lack of penetration—this lack of penetration not being due to lack of energy, but due to bullet upsetting—occasionally flying to pieces on striking—and this may be a fault that may develop with the soft point .22 H. P. Savage, though I am pretty confident that all broadside shots, when the bullets are fairly well placed, should provide meat for the frying pan. Should time prove that the present bullet lacks penetration, it would be an easy matter for the makers to produce another with a hardened core which would rupture less and penetrate farther. Such a bullet as this I predict would have sufficient tearing qualities to make it very deadly on such game, while for smaller game, such as wood chuck, foxes, coyotes and grey wolves, the present bullet would prove entirely satisfactory. The great advantage possessed by this cartridge, as I see it, lies in its extremely high velocity, flat trajectory, great energy, and lack of recoil. If it has a fault for deer shooting it would be in its lack of penetration, not, in my opinion, in its lack of energy. But more concerning this little gun after I have had an opportunity to try it out to some extent. At present I am of the opinion that whatever faults may develop

concerning it as a deer gun, that for such animals as wolves and coyotes it should prove superior to anything we now have. This statement applies to the average shooter under average conditions.

Now, if I understand Mr. Smith correctly, the lever gun he would have, if it could be obtained, would have a box magazine somewhat like the Winchester '95 model and self-loading actions, or a cylindrical magazine like the '99 Savage. Magazines of this type being desired that sharp pointed bullets might be used, the opinion being held that cartridges using bullets of this type are the cartridges of the future. Either of the types of magazines mentioned would suit the writer well enough, though he has a leaning towards the box-magazine type due to it permitting of a somewhat thinner receiver, and the writer, like Mr. Smith, has a weakness for a rifle being rather thin at this point.

All moving parts should be enclosed within the receiver, if I have read Mr. Smith's article aright, and the breech bolt be locked similarly to the Savage. This would be strictly all right, but I am not so certain but what we might disagree about one thing: shall it be hammer or hammerless? If hammer, which I fear I rather prefer, that would be one moving part partly outside the receiver. The length of the '99 Savage rifle, when compared with some other rifles using same length of cartridge, both rifles having same length of barrel, is longer, as Mr. Smith says, which is a rather objectionable feature, though the rifle in other respects is nearly perfect, being as it is, very simple, strong, reliable in action and well made. If the makers could retain its present simplicity, and strength, not losing sight of the reliability, and give us the same arm with the action shortened to correspond with some of our other rifles using cartridges of similar length, we would have a gun that would nearly suit at least Mr. Smith and the writer. We might "agree to disagree" about the hammer or hammerless feature, and might waste a few words over the type of magazine, but in the main part I think the proposed combination would prove pretty satisfactory.

From Mr. Smith's article I understand that the gun should be made for cartridges of the '06 and Remington rimless type. This, of course, would mean two different size receivers. In adapting rimless cartridges to such actions a thin receiver could be used, all parts could be made somewhat smaller than if using the old rimmed cartridges, a fact that I have several times mentioned, the result being a more symmetrical arm, not to mention a lighter one. Mr. Smith objects to a "thick, chunky receiver," and we agree here exactly—no possible chance for an argument over this point. Not only are these receivers objectionable when rifle is carried in saddle scabbard, but, to my eye, the rifle is not as neat in appearance.

The lever action rifle, while it has been with us for so long, has not yet reached its highest development. There is plenty of room for its being simplified and lightened. And that last word—lightened—impels me to say a word concerning our "Featherweight"—so-called—rifles. Really they are featherweight in name only. The old heavy rifles with their long barrels, big bores, and which made history years ago, still look good to me at every point but one, and that point is reached when contemplating a trip in the hills where every additional and unnecessary ounce looks objectionable. (I have in mind these rifles when used in districts where long shots are the exception—for long range work where a mistake in estimating distance would mean a miss they are hardly to be considered seriously when, for such purposes, we have something so much better in the modern high velocity small bore.) But back to our featherweight rifle. As I have intimated we have nothing that can be called featherweight in the strict sense of the word. This isn't saying that we haven't good, dependable rifles, nor that we haven't light rifles; it is merely stating what many know to be a fact, that we haven't a strictly featherweight rifle. A featherweight rifle, as defined by the makers, is a rifle action designed for a certain line of cartridges later fitted with a very light barrel having extreme taper. A featherweight rifle, as I see it, would be a rifle with this same extra light barrel fitted to a receiver as light as would be consistent with safety, adapted to rimless cartridges permitting of parts being reduced in size, a small, short, shapely fore arm, with a correspondingly small, but properly formed and proportioned butt stock. Rifles using rimless shells of the .30-30 class could be made with a 22 to 24-inch tapered, light weight barrel, box magazine giving six shots, that would not exceed 5½ pounds. For the .22 Savage H. P. cartridge this weight could be reduced to 5 pounds, or I should say a cartridge of similar power but rimless type could be made to work in such an action perfectly. This 20-inch Savage barrel weighs 1 pound and 14 ounces. Screw it into a properly proportioned frame to which was attached a butt stock and fore arm, also proportioned to the frame and see what you would have. Take this same 20-inch barrel—yes, or one of same shape but from 2 to 4 inches longer—and screw it into a single shot action cut down to a strictly featherweight basis, and we would have a rifle weighing not over 4½ pounds and yet I believe one that would give as good results in shooting as though attached to a heavier receiver and one originally designed for other cartridges.

Some, who are still wedded to the heavier rifles, may want to know who would purchase such light arms, and particularly a single shot of but 4½ pounds weight. Let the maker but put out a repeating rifle made strictly featherweight, such as I have briefly described, or a single shot to weigh not over the 4½ pounds mentioned, and the rifle users by the thousands would answer the question to the entire satisfaction of the manufacturer. But don't let any maker deceive themselves by offering us anything in the way of a so-called featherweight with a very light barrel on a frame designed for other cartridges. Such rifles can well be called "extra light," and "lightweight," but featherweight—NEVER!

ASHLEY A. HAINES.

Savage H. P. 22 vs. 9mm. Sauer-Mauser

Editor Outdoor Life:—I will try and give my ideas in regard to both the new Savage H. P. 22 and the 9mm. Sauer Mauser. I got the .22 when they were first put on the market, and for weight, looks and balance I have yet to find out where my extra $25 is to be found in the Mauser, unless it is the set triggers. After I got the Savage home I took both out to shoot for penetration, as I believe the right way to find the penetration of a rifle is to penetrate with it. Coming to an oak post 6 measured inches in diameter, I went at it, starting at 15 yards, firing one shot from each rifle and moving back five yards after each two shots. At 50 yards both guns failed to drive clean through but bulged the wood on the backside, and at 55 neither gun showed any signs of coming through at all. For ammunition I used the Savage in the .22 and in the 9mm. Winchester ammunition which, according to all the expert dope, are very carefully underloaded for the Sauer Mauser and do not give results in accuracy and penetration that foreign loads do. Thus far I have never climbed the tariff rail as $1.50 for 25 shells is a little too strong for me.

For penetration and tearing effort the H. P. .22 went in just as far as the 9mm. and tore out just as big a hole in the post when it came out. I think this a fair test as both guns were used under the same weather conditions, bullets both soft point, shot from same distance and into the same material. The Savage has no recoil and the Mauser—well, some people have different views in regard to that, but when I start those tight fitting 280-grain bullets going from a 6½-pound gun, I have been quickly put wise to the fact that I have started something. With the H. P. .22 all I hear or feel is the noise, which is about the same as the 9mm. The point blank range of the Savage is 350 yards, and for the Mauser I don't know—have been trying to find out ever since I owned it. But one thing I do believe, and that is that the killing power is about equal, if shooting into white oak is any proof. This seems to be brought about in two different ways—in the Mauser medium velocity and heavy bullet and in the Savage high velocity and light bullet; and the .22, with a point blank range of 350 yards and a trajectory flatter than the 1906 Springfield, is what I call going some. The Mauser has a muzzle velocity of 1,800 foot-second energy, and 2,180 foot-pounds; Savage, muzzle velocity, 2,800 foot-seconds; energy, 1,206 foot-pounds. But you have got to show me where muzzle energy counts for anything over high velocity, because if it does I should think it would show in penetrating and smashing power, which is just what it did not do, shot for shot, with the H. P. .22, and I think all will agree with me that the Sauer-Mauser is some rifle.

The Savage Arms Company should advertise this .22 for spreading foxes all over the snow at long and unknown ranges instead of shooting them at the same distances, because that is what is likely to happen when that bullet gets through. At the 100-yard target (that is as far as it is safe to shoot around here) I made 5x6 offhand with .22 and 7x10 with the 9mm., so you can see what a poor shot I am on the 4-inch bull. When I start on my moose hunt this fall, I guess my guide will sit up and take notice when I tell him I have come to shoot moose with a .22 caliber rifle, and, believe me, I think I'll get the game. There is only one thing that I can find fault with in the Savage, and that's the somewhat heavy trigger pull. If they would only fit this gun with some kind of hair triggers then we would surely have the real all-around gun; at least, that's my opinion as far as I have gone at present. I have owned in order named, the .35 Remington Auto, .405 Winchester, 9mm. Sauer-Mauser, and last the H. P. .22.

Mass. S. P. OSGOOD.

Common Knowledge Concerning Rifles

By R. L. Glasgow.

Everything—tangible or intangible—is infinite in the number and character of its relationships to other things. Therefore, the finite mind is incapable of a comprehensive knowledge concerning anything to a perfect degree. But there is a sort of knowledge

given to man which is sufficient unto his earthly needs, and it is only necessary that he make intelligent use of his faculties to obtain it.

The gradations of knowledge concerning small arms are numerous and varied as is also the case regarding everything else, but it is apparent to any thoughtful man that the common standard is far below what it should be, considering the widespread use and abuse to which they are put. European governments recognizing this fact among their subjects, and the many evils attendant thereupon, took strenuous measures in the matter—every one. To an American, these measures appear drastic and out of all proportion to justice and common liberty. This may be true in a large measure, but there certainly is a middle ground somewhere between the two extremes that is more nearly right than either the regulations in Europe or the lack of scarcely any regulations whatever in this country.

It would appear to one accustomed to using and handling fire arms from his youth and making close observations in every department of their manufacture, evolution and application, that the solution of the greatest evil concerning them lies in bringing the people to a better knowledge of them. There is no sort of doubt about there being a condition that is spreading suffering throughout the whole domain still left to the remnant of our fast-vanishing big game. Chiefest of the causes thereof is the use of rifles with insufficient striking power or energy, to make clean kills at the first shot under the ordinary range and shooting conditions. Our deer and elk have been hunted so persistently, and harried so relentlessly years past, that, if possible, they are developing a sense of self-preservation to a keenness and hiding strategy that makes shots at them very difficult indeed. There is scarcely an instance where a hunter could—if he had the coolness to do so—select his ground and place his shot in a vital spot. At least, an overwhelming majority of shots are taken at running deer or elk. Most of these shots are taken with the widely prevalent rifle of the .30-30 class. Experiences and observations piled upon top of experiences and observations in the game fields of the West show conclusively that rifles of that class wound without making clean kills more often than they drop the animal in its tracks at the first shot. It may be unfair to say that the majority of animals shot thus escapes, but it is fair to state that the proportion escaping from the hunter wounded in all the varied degrees which finally result in a long period of cruel suffering and final death, is not wholesome for the mind and heart of a true sportsman to contemplate. If the reader has ever hunted in the West, and been associated with hunters and sportsmen to any very familiar degree, he has seen some among these knights of the woods and camp fire who make no mystery of the fact of their faithlessness in the efficiency of their ".30-30's" as a big game gun. There are still others who will maintain that their rifles of the .30-30 class are "just the thing exactly," but contradict themselves sooner or later by telling you that they "have lost no bear and ain't huntin' any." It may be an open question as to whether a black bear has as much, or more, vitality than the average black-tail deer or the elk. But it is safe to say also, that were the deer and elk less timid than Brer Bear, there would be fewer small caliber rifles used in big game hunting in this country—or it would be best to say, rifles of low striking power. The vitality of so large an animal—all deer—as our black tail deer is wonderful. The vitality of the equally beautiful and ponderous elk is in exact proportion to its size. The vitality of every species of the deer and antelope family is so well known to sportsmen that it is proverbial. Therefore, then, it does seem that there should be some move made, somewhere, by somebody, to cause this question of efficiency of rifles for the purpose used, to have an authoritative investigation. It is the conscientious opinion of the writer that a judgment against the use of rifles of the .30-30 class for all hunting where elk, especially, is likely to be part of the quarry, would be a judgment in favor of our game, our fraternity brotherhood of sportsmen, and in the interest of a humanitarian consideration for the needless suffering of dumb animals. Since our game is disappearing so fast, never to return, it certainly can be only fair that it be given humane consideration as to the manner in which it is to give up its earthly, and only, existence, and, as has been aptly said, with no needless suffering. Even if it is yet a question as to whether the average rifle used is sufficiently powerful for our game, it is honorable to give the victims the benefit of any doubt. Brethren of the fraternity, let us turn our minds reminiscently inward upon our woodland experiences and the pictures they have graven upon our memories. This will surely serve to arouse our sleeping consciences to some activity for the alleviation of a condition of piece-meal murder and long-drawn-out suffering betime.

Picture again, if you will, the bounding deer, the quick aim, the smacking report of your rifle! You see the "hunch" or the swerve or the frantic leap or some one of the many other evidences readily recognized by sportsmen, that the bullet found its mark, but the deer speeds on and is soon lost to your view. You follow on and reach the spot where the quarry disappeared. You see a small splotch of blood upon a leaf, or in the dust. An hour of following with rifle cocked and in position to deal out an-

other messenger of suffering and death brings you to a thick covert, and a glance shows you the timid animal, no longer able to rise to the feet that have been faithful to carry him out of the way of danger hundreds of times during his free life in the wilderness. You are in no hurry now. Do you not recall the look of mingled pain and fright? Those eyes—appealing, yet hopeless—view you and your death-dealing weapon with certain knowledge of his unhappy end, and you mercifully put the unfortunate creature beyond its suffering. Such, and so much, may be legitimate sacrifice to the gods of sportsmenship, but there are other pictures, true in fact, and a hundred times more deplorable, tragic and shameful. Hundreds of wounded deer and elk escape from the hunter entirely—hundreds each season. With a wound too small to emit the blood by whch he might have been tracked to his merciful death by the hunter, he skims away over rocks and through thick woods, perhaps for miles, until the inward bleeding saps his strength and sickens him. Creeping tremblingly and faint into some copse he folds his weakening limbs under him and lies still. Ears and eyes alert and straining to catch the slightest movement or smallest sound of a pursuer, he aches and grows ever sicker and weaker, perhaps struggling between life and death through the long hours of the night—next day—another night. A comatose nap is disturbed by a familiar but dreaded sound. Nearer and nearer the sound approaches until gaunt forms materialize about. The snarling and rending of innocent flesh might be heard by the wilderness folk, which marks the end of a tragedy—shameful and useless. The hunter's aim was not bad. The tragedy lay in the fact that the shot was taken at a range of some distance, the velocity and weight of the bullet had fallen off to such a degree that the sustained energy was insufficient to impart an impact, or shock, sufficient to arrest the vitality of the unfortunate beast. The rending was insufficient to cause sufficient immediate hemorrage. Every sportsman decks the walls of his memory with the pleasant experiences, and even enjoys a sort of revelry in recounting to himself and friends his own hardships, but he recoils from such recollections as those mentioned above, which fall to him in the woods. The advice of the writer to brother sportsmen in the matter of preserving peaceful consciences the while would be: Cease speculating as to whether your rifle is adapted to its purpose and get one that leaves your doubt free. As for the writer, he certainly has hung crape on his memory of, and confidence in, all rifles of the .30-30 class for hunting where elk is likely to be encountered—or even the heavy black-tail deer.

A friend of the writer—a hunter and sportsman of experience—hunted Alaska brown bear last spring. Arriving there, he found difficulty in securing a man who would attend him as a guide, because his rifle was "too small." The rifle is the popular Winchester model of 1895 shooting the no less popular government .30-40 cartridge. Have we not all heard how this dreadnaught of American arms has laid low the monarchs of the wild in every part of the world? Certainly there be those who will wax wroth at the mere mention of anything discrediting concerning the efficiency of this combination of rifle and cartridge. But listen. The hunter in question finally found a man who agreed to go with him, but very reluctantly, and not until he had bound the hunter over to certain solemn promises as to the chances to be taken in tackling a bear with that rifle. A start was made and only a short way into the interior, a young Alaska brown bear was sighted and shot at by the hunter. The bear took cover in a dense thicket, and with much difficulty the guide restrained the hunter from attempting an investigation of his retreat, until almost, if not a full hour, had passed.

Hoping the bear would either die or come from cover they waited. Finally an investigation was permitted by the guide, and begun by the hunter. The next few seconds were about the busiest, most exciting and most dangerous that that particular hunter is able to call to memory. It took all the cartridges in a fresh-filled magazine pretty well placed in that bear before he was stopped, and then only a few feet distant from the charged hunter.

This same hunter gives as another experience the shooting of a full-grown Alaska bear seventeen times before his experienced guide and himself considered it safe to remain neighbors with him. Here is a hunter whose confidence in his rifle, up to the time of his Alaska experience, was such as to make him think it powerful enough for elephant or rhino—for had not he been assured of it by many hunters? and certain death to so insignificant a creature as a mere American bear. He was out of patience with the incredulity of those Alaskan guides! This conversion was genuine, and he now thinks a .500-450 Cordite Holland & Holland about the "dope" for Alaska bear! Don't think he would even stop to consider a Winchester .405! Such experiences convince the man who has them, that rifles should be chosen with judgment and knowledge as to its adaptation for the purpose used, but seldom is it that any other than he can be convinced, so it seems.

In addition to those mentioned above the remedy for this, in part, would seem to lie in proper education concerning ballistics. It is almost universally true that hunters have no well defined idea whatever as to any part of the known ballistical properties of any

rifle. Their by-guess-and-be-gad methods are about as effectual in arriving at a practical and humane conclusion concerning the adaptation of their rifles to the work in hand as a lightning bug would be to one essaying a trip through the catacombs of Rome.

The American manufacturer of fire arms does not lay much store by the intelligence of the average sportsman. The catalogue he issues purporting to set forth the virtues of his wares leaves much to guess at. One page usually gives all the ballistical information offered for the whole line of ammunition of American design and manufacture. Not a single powder charge is given. Not a word concerning the kind or character of powder loaded into these cartridges. No energies given but the muzzle energies in many instances. It is a law of physics that energy diminishes the moment the bullet leaves the muzzle of the rifle, and there is great variance between the sustained energies at the different ranges, without reference to mere caliber. We do not shoot game with the muzzle of the rifle pressed against, or within an inch or two of the breast!

If a man in any other department of trade or commerce knew as little about his wares or commodities, and conducted his business along the same general lines, as the average gun and ammunition retail dealer, he would be in business about as long as the proverbial snowball would last in that place mentioned as having a very warm climate and known by a very short name. The average clerk in a gun store having no more knowledge of other things than he does of guns and ammunition and hunting and shooting would not be thought to have enough common sense to do him over night, or let run at large at all, and would likely bring up in a ward for incurables.

This being the case, then it is not to be wondered at that things are so out of joint in the big game shooting world—or that part of it which is in America.

Concerning the New High-Power Stevens

At the Sportsman's Show in New York I saw for the first time a Stevens high-power .35-caliber rifle. It was a neat-looking gun, and I wonder if any of your readers who have used it would let me know the result of their experience?

Comparing it with the Winchester 1895 model, *.35 caliber, the barrel of the latter is 24 inches long, its weight 8½ pounds; it has a box magazine, and the capacity of the gun is five cartridges. The Stevens barrel is 22 inches long, weighs 7 pounds, is not a box magazine, and the capacity of the gun is six cartridges. It is listed at $20; the Winchester at $30. The action of the gun from a brief inspection seemed excellent.

The box magazine feature of the high-power Winchester rifles makes these guns, to me, unpleasant to carry on an all-day's hunt, and especially in the carbine, tends to make the balance poor. For this reason the magazines of the Model '86 and '94 Winchesters appeal to me more, and it is this character of magazine that the Stevens rifle apparently has.

Is it the opinion of men who have used it that the .35-caliber Stevens shooting the ammunition adapted for it is a powerful enough gun for the biggest of American big game, such as Alaska bear and moose?

Z. MARSHALL CRANE.

(Note.—As the .35-caliber Stevens high-power rifle has been on the market but a short time, we can hand out little information concerning its use or effect on large game, but due to the fact that the .35 Remington autoloading has so often been used so successfully on the biggest of American big game, and remembering that the Remington uses the same .35 cartridge as the Stevens, it would seem that this cartridge in a reliable rifle, properly handled, should be sufficiently powerful for any game on this continent. As proof of the effectiveness of the .35 Remington we might point to the success which attended the hunt of Mr. Hillis and Mr. King for Kadiak bear as related in Outdoor Life about two years ago by Mr. King. If we remember rightly five of these bears fell victims to their Remington .35 auto-loading rifles, these bears representing all they shot at, we believe.

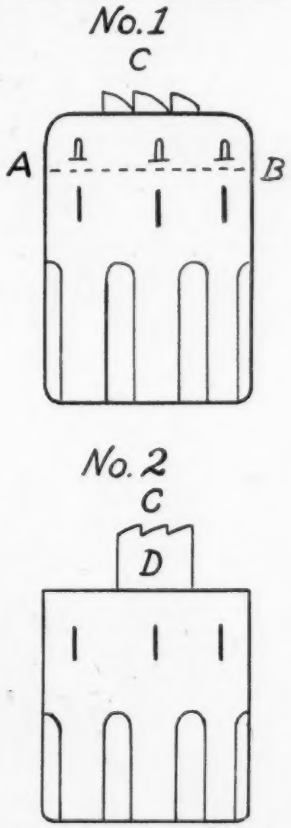
*The .35 caliber, Model 1895 Winchester, is a more powerful arm than the .35 Stevens, consequently heavier.—Editor.)

Another Remodeled Colt

Editor Outdoor Life:—Noticing a query from a contributor in regard to changing a cap-and-ball revolver to a cartridge gun and Mr. Thomas' reply, I will send a description of the operation by which some are converted:

First remove the cylinder and place in a lathe, then cut it around, as shown in the sketch as line "A-B." The tube "C," carrying the ratchet "D," is left about ¼ inch thick. The chambers are now open at the breech, as in any revolver. A plate, such as Mr. Thomas described, must now be fitted to the breech plate on the frame, having

a recess for the ratchet tube and one for the firing-pin, which is inserted in a hole drilled into the hammer. A loading gate and ejector, similar to the S. A. Colts, are now put on, and the gun is in serviceable condition.



Cal. .36, using .38 Colt, short and long.

A friend of mine has one of these revolvers, which I believe came from Bannerman which was a splendid shooter. But some of the boys borrowed it one day and used the .38 automatic cartridge, bursting the cylinder. A new one could be secured at little expense, however. D. WIGGINS.
Nebraska.

"THE MAN BEHIND THE GUN."

A. Hadley of Gunn, Wyo., breaking a small piece of coal with a .38-40 Colt's New Service revolver.

Rifles of the .30-30 Class Powerful Enough for This Man

Editor Outdoor Life:—I am very much interested in the discussion concerning the proper caliber rifle for deer shooting. If any one should tell me that a .30-30 was too small for deer I should tell him that, in my opinion, he was wrong. A .30-30 is powerful enough for me. When one cannot kill deer or bear under 300 yards with it it is not the gun's fault. In the April number Mr. C. V. Oden says the large caliber will not spoil as much meat as the smaller bore. Now, I use a .25-20, the gun that Mr. Oden says bruised two deer the worst of any he ever shot, stating that he had to shoot them three times before he killed them. Now, I have seen a deer shot as many as four times with a .30-40 before he dropped, and these four shots spoiled as much meat as five .25-20s. They made holes large enough to put one's fist in. Of course the meat was good up to where the bullet went through, while the bullet of the small bore stopped

and the blood lodged there, but I couldn't see that it spoiled any more meat than the .30-40.

Very few deer are killed at the first shot, though it happens occasionally. I have seen a black bear go down at the first crack of a .25-20 and at another time seen them shot eight times with the same gun before they went down. I never blame the gun when I fail to kill any game, as I think the results mostly depend where you place the shot, whether the gun be a .30-30 or a .405. I do not mean to say one should always hit them in the right place, for I live in the mountains where the brush is very thick and know that one cannot always hit a deer where he would like to, as one has to shoot at them under varying conditions.

Here last season a fellow shot a deer three times with a .32-40 and it escaped. Now, the reader will wonder how I know that the deer was hit three times. About a week afterwards a deer was found in a cañon with three good-sized holes in him which proved to be the one the man had shot.

Now, I am not saying that the .25-20 is the gun for big game, but whenever I see a deer anywhere under 200 yards he gets it. I would say to those who may have one of these little guns that whenever they see a bear to let him have it, for it is just as I have said—you may kill him the first shot or you may have to hit him six or eight times. It seems to me that I kill them all right with the .25-20; but if anyone should ask me about the all-around gun I should tell him that the .30-30 would be right there with the goods. R. L. HULLINGER.

California.

Arms and Ammunition Queries

Robert E. Norfleet, Kansas City.—I am intending to purchase a new rifle and I am badly in need of some reliable information. In the past I have used a .45-70-caliber, 1886 Winchester, but it is entirely too much gun. Small bores for yours truly hereafter. No more canons for mine. As I like to shoot at the targets whenever I get a chance, I usually carry my Stevens .28-30-120, but, as you know, this is only a single-shot, and its effective range, as for consistent accuracy, is only 200 yards.

Now, I want an arm that combines accuracy at fairly long range, say 800 yards, a shell of such a shape that it provides of ease of reloading and of sure extraction. I surely do like to fuss with reloading tools; also experimental loads. Will the Winchester Model 1895 .30 United States Army, which is chambered for the 220-grain bullet, use the 180 and 172-grain Spitzer bullets? And would not the use of the lighter bullets with the same amount of powder greatly reduce the recoil? While I understand that the Spitzer bullets can only be used as single loaders, I believe that with the 180-grain bullet I can obtain as great accuracy at 800 yards, together with lighter recoil, as can be obtained with the 1895 Winchester .30 '03 caliber, 220-grain bullet. Don't you think so? Do you think that with this 180-grain bullet the trajectory would be flat enough for accurate shots at game within 150 or 200 yards without fooling with and taking valuable time to elevate the sight? Will the 180-grain Spitzer, when used in the Krag, give a flatter trajectory and higher velocity than the .30-caliber, 1903 Springfield? (With 220-grain bullet).

Do you advise me to get the .30-caliber, either 1903 or 1906 or the .30 United States Army rim cartridge, in the take-down model, or does this take-down feature dangerously weaken the rifle, and would it not be apt to shoot loose after a couple of thousand rounds? Is it not true that the .30-caliber United States Army (rim) has a longer accurate life than either the '03 or '06 rimless calibers?

What is the average accurate life of the United States Army .30-caliber (rim) and also the '03 and '06 rimless, providing, of course, that either arms is properly and thoroughly cleaned at proper intervals? What sights are good for all-round hunting?

Answer.—As we understand from your letter, you find your Model 1886, .45-70 too heavy for your use and are inclined toward choosing a .30 Army, and as you desire to do reloading, in which case you are desirous of working up various loads for different purposes, we are inclined to think this would be about as good a rifle as you could select. The Model '95 rifle will handle the 150, 180 and 190-grain pointed bullets, though the last two will not function from the magazine and when shooting these the rifle will have to be used as a single-shot. The cartridge loaded with the 150-grain bullet is of the same over-all length as the regular .30-40 ammunition and will work satisfactorily through the magazine. With either the 150 or 180-grain pointed bullet the velocity is considerably higher than is obtained with the 220-grain round-pointed one, and with practically no difference in recoil. The trajectory of any of the pointed bullets is so flat that practically no adjustment of sights is necessary over 100 or 200-yard ranges; that is, for ordinary game shooting. The trajectory with the pointed bullet is also much flatter and the velocity higher than obtained with '06 cart-

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ADDRESS DEPARTMENT 23

DU PONT POWDER CO., Wilmington, Del.

ridges loaded with 220-grain, soft-point bullets. It is rather difficult to answer questions in regard to the accurate life of a rifle barrel, as this depends, of course, to a certain extent, on pressures and velocity of the ammunition used. For instance, in the .30 Army rifle used with the 220-grain bullet the barrel would last longer and maintain greater accuracy for a greater number of shots than when using pointed bullets, which are put up in cartridges developing more pressures and more velocity. We are also of the opinion that much depends on whether rifle is subjected to much rapid fire or not. Under ordinary conditions the rifle using the '06 cartridge could probably be used without any material wear up to four or five thousand shots, while with the .30-40 the barrel would probably last from six to eight thousand shots.

We have heard no complaints whatever in reference to the take-down system of the '95 model rifles working loose from any reason. If, however, this should occur, a simple and positive method of readjustment is provided for in this rifle.

As for sights, this is a question that, usually, the user of the rifle will be far better prepared to answer than anyone else. For all-around use, which we understand you will want sights for, we think you would do well to select an open rear sight or the Lyman receiver sight if you prefer a peep, and some one of the many desirable bead front sights. For hunting purposes, the writer rather leans to an open rear sight that has been "worked over" to prevent glitter in bright lights (something not found on the regular factory rear sight) and either a gold or silver bead front sight to use with it.

H. D. Barnes, Miller, S. D.:—I have purchased from the U. S. Government a .30 caliber U. S. Krag carbine, Model 1886. The sights now on the gun are the regular military sights, which are not adapted to sporting shooting. I would like to know what kind of a rear open sight I could fit to this carbine. The regular sight is put on with screws, and the barrel is not slotted. I would like also to have the sight put on the barrel as far back as possible so as to give more distance between sights, but the barrel is very much tapered near the breech and I am wondering if it will be possible to get the rear sight set low enough so that I could sight the rifle for 100 yards shooting. I would be obliged if you could give me any information as to what sight would be the best adapted for this particular style of gun.

Answer.—To the above query Mr. Charles Newton has kindly replied as follows: "The proposition involves practically four questions, viz.: how to attach the sight, where to attach the sight, what kind of a sight to attach, and whether or not the sight line will be sufficiently high to permit the use of a rear sight nearer the eye. As to how to attach the sight, the leaf can be removed from the present sight block and the block can be smoothed off and slotted to drive in one of the dove-tail form of sights, or a new block can be fitted and fastened to the barrel with the present screws, entering the present screw holes, and this block can be slotted to receive the rear sight. As to the position in which to attach the sight, it is always desirable to have as great a distance between the sights as is practicable without sacrificing other elements. However, it is well not to get an open rear sight too close to the eye, as under those circumstances it blurs, thus more than neutralizing the advantage of the longer sight line. A good example of this is seen in the foreign rifles now on sale in this country, the sights of which are placed usually about 9 inches in front of the trigger and which give much clearer and better definition than do our American sights which are placed nearer the eye. As to the form of sight to attach; this depends to an extent upon the individual eye of the user. The regular Krag sight for most eyes makes a very good sporting sight. The best model of sporting rear sights, as far as the definition and certainty in using are concerned, are of the model found on the foreign rifles, consisting of a flat top bar with a round or 'U' shaped notch, and in using which the top of the front sight is held level with the top of the bar. This does away with any difficulty in drawing too coarse or too fine a sight. A slightly more accurate sight can be made on the plan of the 'Patridge' pistol sight, which is a deep 'U' notch in the rear sight, of such width that when the front sight is seen through it the front sight fills one-third of the 'U,' leaving an open space on each side apparently equal in width to the front sight itself, it being a straight blade front sight. In sighting the top of the front sight is held level with the top of the bar. In American sights the Winchester 'flat top sporting rear sight' comes near this shape, but it has a 'V' shaped notch instead of the round notch or the 'U.' The King sporting rear sight is the best on the market in this country. It is made with a flat top and has a removable piece carrying notches of different sizes and shapes, and can very easily be made to fit the eye. As to the height of the rear sight permissible, the height of the sight line can be easily ascertained by setting the present rear sight for 100 yards and looking through the sights. If this be found too low all that is necessary is to remove the front sight blade and insert a higher blade which will raise the sight line accordingly."

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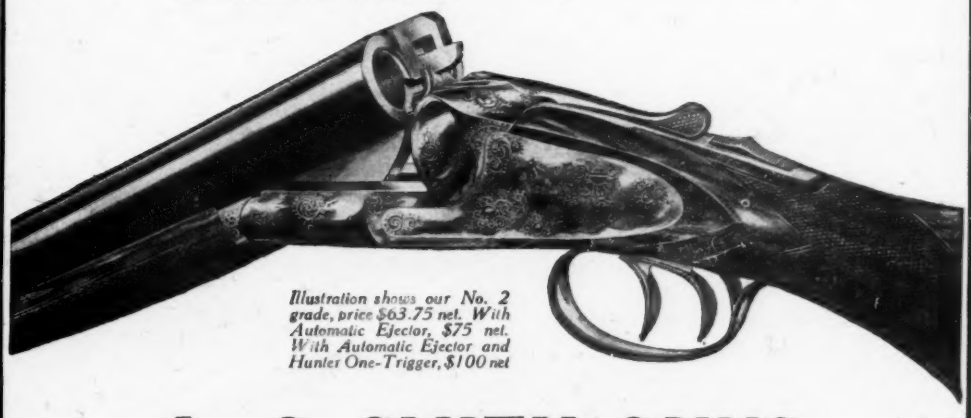

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BOOKS FOR THE SPORTSMAN

Stories of Some Shoots, by James A. Drain; 114 pages; $1.25 net; Arms and The Man Pub. Co., Washington, D. C.

This is a breezily-narrated experience of an American sportsman in the Scottish Highlands, where he stalked the Scotch stag on its native heath and shot the Scotch pheasant in real Scotch heather. The foundation for the story is furnished by an invitation from a landed Scotchman to the author to shoot ducks on his vast game preserves. The incredulity and reluctance of the American at the idea of shooting "tame ducks" and the subsequent opportunities afforded him later for the stalking of the stags and the long days of perfect sport with various native game birds make an interesting story.

Photography Outdoors; 64 pages; 60 cents net; Tennant & Ward, publishers, New York.

This book is one containing practical suggestions for beginners on the choice and treatment of all outdoor subjects. The work tells in simple language about the equipment required, how to treat the various kinds of subjects—in short, how to make pictures.

(Above books for sale by Outdoor Life. Postage extra.)

Trade Literature

The Evinrude Motor Co. of 360 Walker, Milwaukee, Wis., are sending out literature to those interested in converting a rowboat into a gasoline launch.

The F. W. King Optical Co. of Cleveland, Ohio, has issued a booklet entitled "Sportsmen's Glasses," which is a great aid to a shooter, a golfer, an auto driver or a tennis player in selecting a proper pair of glasses, and which they send to sportsmen on request.

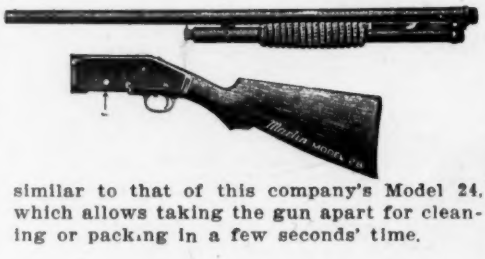
The Robin Hood Ammunition Co. of Swanton, Vt., has issued an attractive booklet entitled "Facts About Our Shell Game," that they are sending to shooters upon request. Some valuable tips to field and trap shooters are contained within the thirty-two pages of the little book.

The J. Stevens Arms & Tool Co. of Chicopee Falls, Mass., have issued their Rifle Catalog No. 11, which has to do with high-power repeating rifles, .22-caliber repeating rifles, target rifles, pistols and pocket rifles, single-shot rifles, rifle accessories, etc. The book is sent free to sportsmen and shooters.

New Sporting Accessories

(Under the above heading will be reviewed briefly each month any new arm or outing accessory that we deem of sufficient general interest to our readers to publish.)

NEW MARLIN REPEATING SHOTGUN.



The Marlin Firearms Co. have placed on the market a 12-gauge, 6-shot hammerless repeater weighing about eight pounds, cut of which is herewith shown. The action parts are entirely within the receiver; the grip or buttstock is not cut away or weakened; the natural shape of the receiver allows fitting the most perfectly designed buttstock on any pump gun. The take-down construction is similar to that of this company's Model 24, which allows taking the gun apart for cleaning or packing in a few seconds' time.